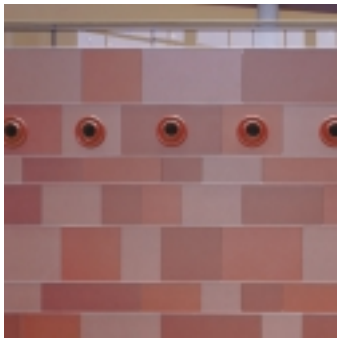
INTERIORS WITH ETERNIT

Eternit



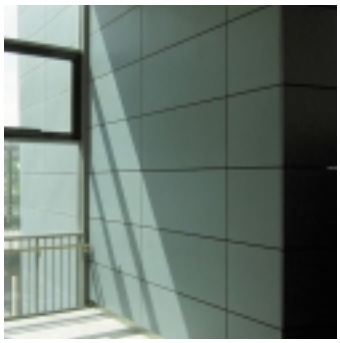
1 2 3

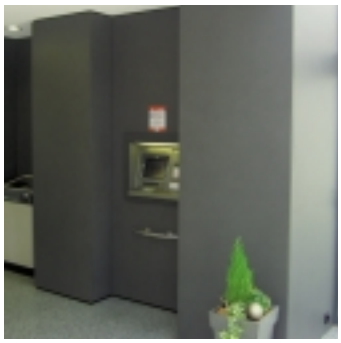
1. ver.di federal head office, Berlin
   Design: Kny + Weber, Berlin
2. Jakob-Kaiser-Haus, Berlin
   Design: de Architekten Cie., Amsterdam
3. Haus der Geschichte, Stuttgart
   Design: Wilford Schupp Architekten, Stuttgart



4 5 6

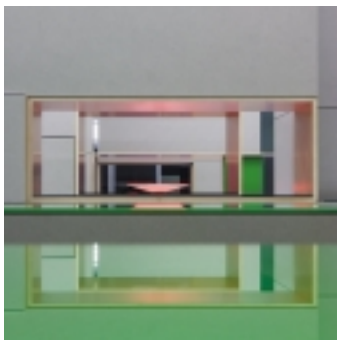
4. Innovation Campus Wolfsburg
   Design: O.M.Architekten, Braunschweig
5. Stair extension, BTU Cottbus
   Design: Architekturwerkstatt, Cottbus
6. Dresden Airport
   Design: Blees & Kampmann, München





7 8 9

7. Heidelberg University Clinic
   Design: Arcass mbH, Stuttgart
8. Youth centre, Warburg
   Design: Bieling & Bieling, Kassel
9. Sparkasse bank, Biberach
   Design: Wussler-Wussler-Grimm, Biberach


10 11 12

10. Küchenwerkstatt, Hamburg
    Design: Planungsbüro Goss, Hamburg
11. Eternit AG, Heidelberg
    Design: Astrid Bornheim, Berlin
12. Kitchen unit, Berlin
    Design: Gruber + Popp, Berlin

Eternit

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Cover photo: Dresden Airport
Design: Blees & Kampmann, München
Photo: Grit Dörre, Dresden

CONTENTS

Technical status 2007
All notes, technical and graphic information correspond to the current state of the art and to our experience based on this. The installations described are examples and do not take into consideration the conditions particular to individual cases. The information given and the suitability of the materials for the proposed use must be checked by the purchaser in all cases. Eternit AG accepts no liability. This also applies in respect of misprints and subsequent changes of a technical nature.

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Edition: 2007

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Illustrations are not to scale.

Entrance hall, Strittmater High School, Gransee
Material: Fibre cement, Structura
Fixing: Eternit-Tergo
Design: pbr Planungsbüro Rohling, Berlin
Construction: Beer & Lang Metallbau GmbH, Neunhofen
Photo: Eternit AG, Kai Hessel

INTRODUCTION

Eternit AG has been selling fibre cement products in Germany for over 75 years and wood cement products for over 25 years. The increasing attractiveness of these materials is clearly demonstrated by the growing number of ways in which they are being used for exteriors and interiors. The use of Eternit indoors has diversified strongly during the last ten years and it is taking on an ever more important role in designs by architects and interior designers.

This brochure "Interiors with Eternit" presents recent designs using Eternit products in the categories of

- public buildings,
- restaurants,
- showrooms and
- furniture.

Fibre cement (Natura and Structura) has a characteristic appearance and feel that give it a unique profile as a material.

Wood cement (Duripanel) too is attractive, with a subtle cement grey surface that can be used in its natural state, or colour-coated.

A wide range of colours can be combined to accentuate elements of a design, as can be seen in the federal head office of the trade union ver.di (page 6).

At Hardehausen Youth Centre (page 20) a mixed arrangement of horizontal and vertical panels creates a lively composition out of the pattern of joints, while at the Sparkasse bank of Biberach (page 21) large-format panels give the impression of a single, free-standing unit.

The use of Eternit products in furniture opens up a new range of possibilities in designing and constructing monolithic surfaces. Is it a fitted cupboard, or a solid wall? The video archiving unit on page 28 combines the aesthetics of both.

A two-page overview of our product range (pages 48-49) allows you to compare different products, colours and technical specifications at a glance.

The Planning Information section beginning on page 30 contains interesting technical solutions, some of which are exclusively applicable to interior situations:

- screw fixing
- rivet fixing
- adhesive system
- concealed fixing

We also present some solutions for special interior situations (page 44). These include the formation of joints, the insertion of inspection/access hatches and openings, as well as mitred edges.

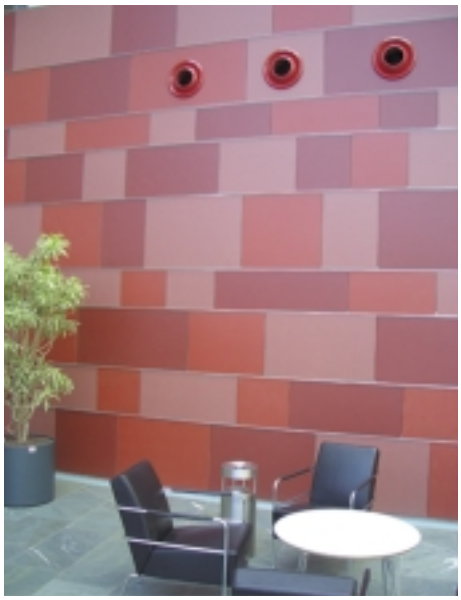
"Interiors with Eternit" should be used as a basis for planning and design only in conjunction with the latest editions of the publications "Cladding with Fibre Cement".

We hope that you will enjoy reading "Interiors with Eternit" and find it not only a practical help, but a source of creative inspiration.

Eternit AG

ver.di Federal Head Office, Berlin

Interior view

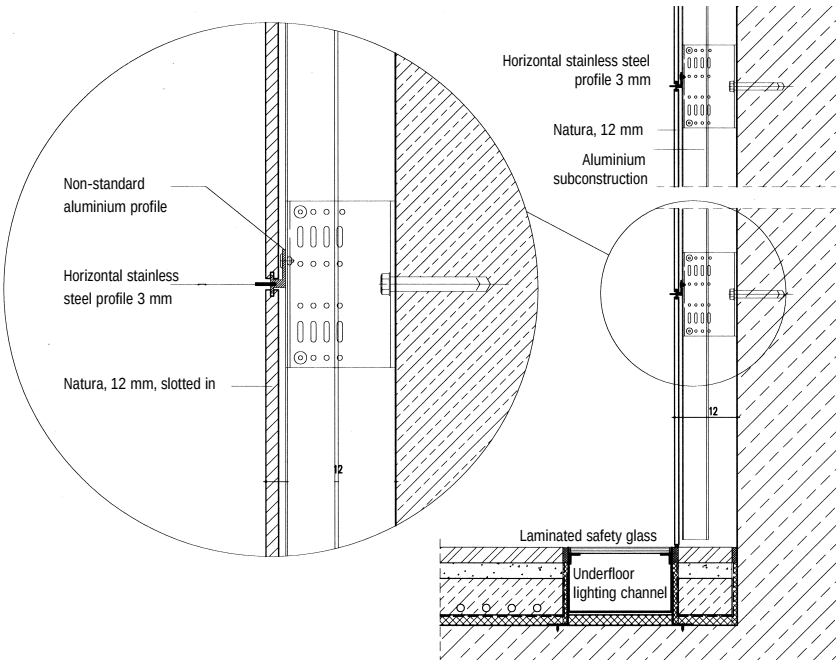


Ventilation openings

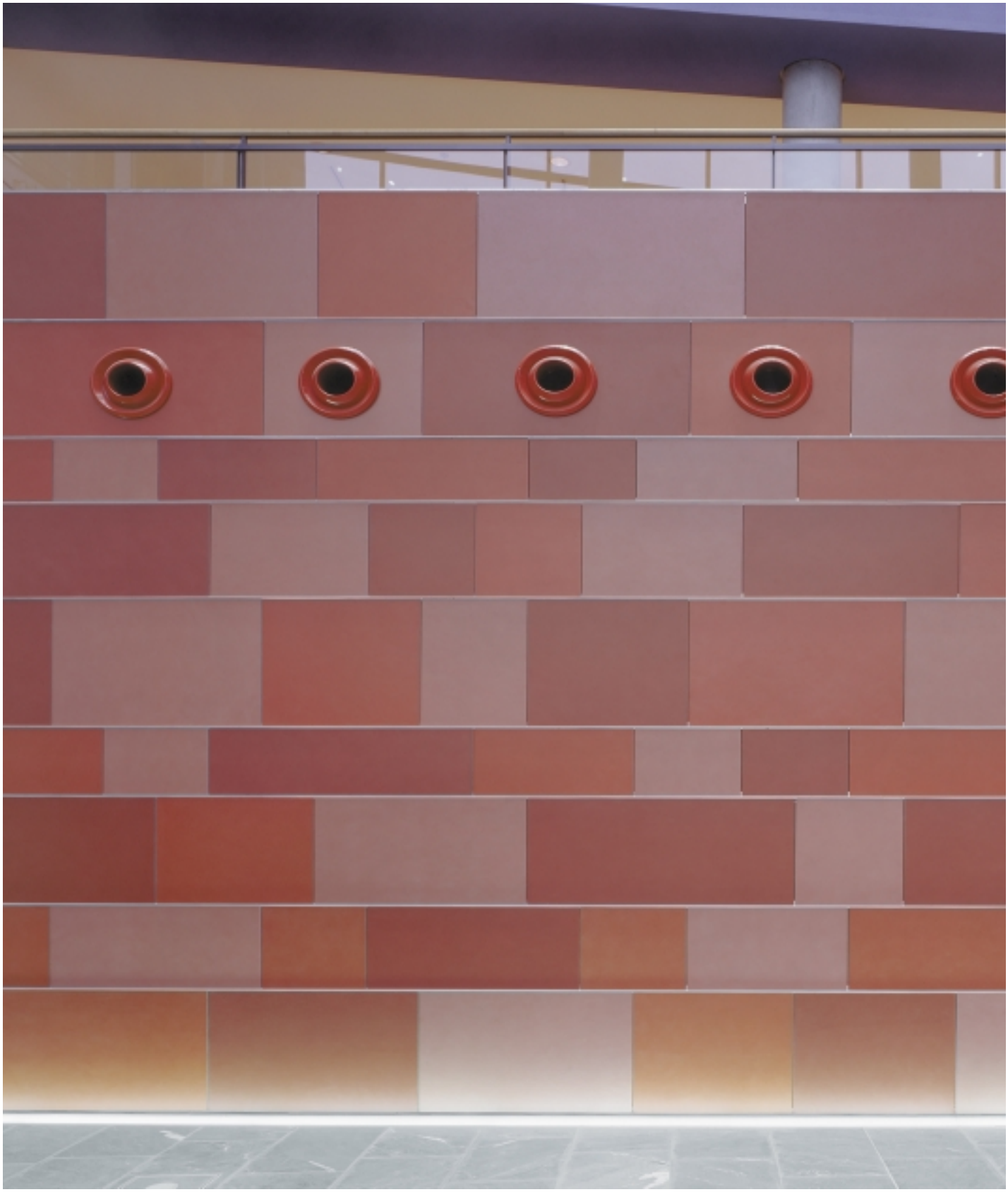
Transition from interior to façade

Material: fibre cement, Natura
Fixing: Eternit-Tergo,
with profile applied to joints
Design: Kny + Weber, Berlin
Construction: Fa. Gefatec, Berlin
Photos: Stefan Dauth, Berlin (page 7)
Page 6, left: diephotodesigner.de, Berlin
centre: Eternit AG, Silvia Lutz
right: Eternit AG, Kai Hessel

The new federal headquarters building for the trade union ver.di is clearly a composition of several different volumes. The conference hall, for example, is clearly identifiable both from inside and outside the building. The material used for the external and internal façade had to meet high standards of fire safety, thermal insulation and durability. Eternit Natura panels, made of fibre cement, fulfil these requirements. The panels, 12 mm thick, are fixed 'secretly' using undercut anchors on the back to the panel (Eternit-Tergo system). Stainless steel profiles were mounted between the panels and the aluminium subconstruction, creating a horizontal emphasis. These also made it possible to insert the panels from below (see detail). At the door lintels, insufficient depth was available for this construction, so coloured façade screws were used to fix the panels. This method also made it possible to integrate inspection hatches in the design. On the ground floor, a continuous perimeter floor strip illuminates the combination of Eternit cladding panels and stainless steel profiles from below, giving the impression of a shimmering, red wall.

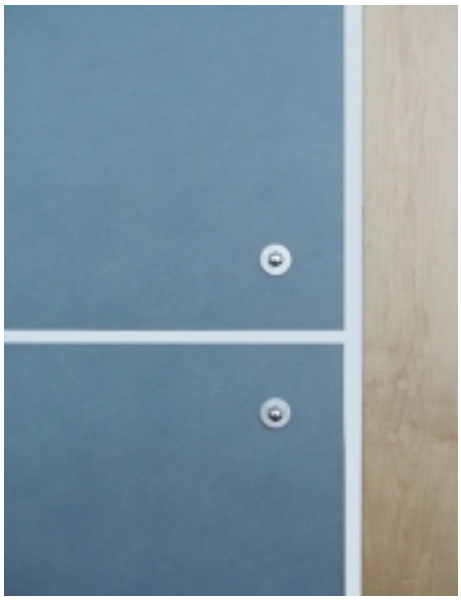


Non-Standard Detail – Vertical Section



Jakob-Kaiser-Haus, Governmentbuilding, Berlin

Fibre-cement as a functional wall covering

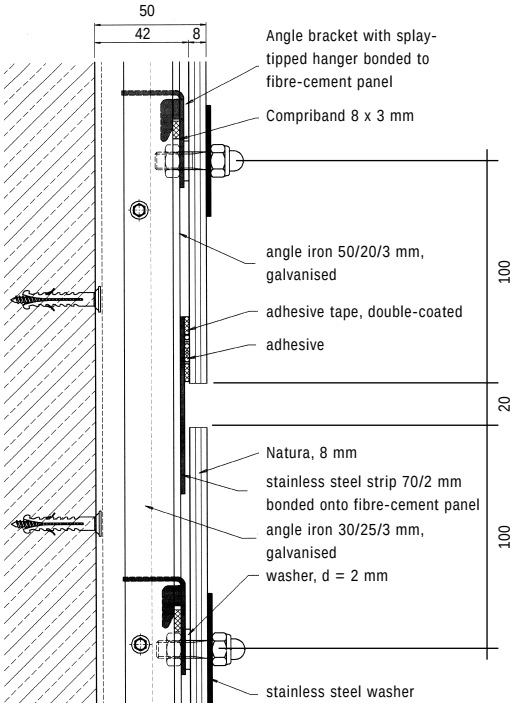


Detail view

View of the atrium

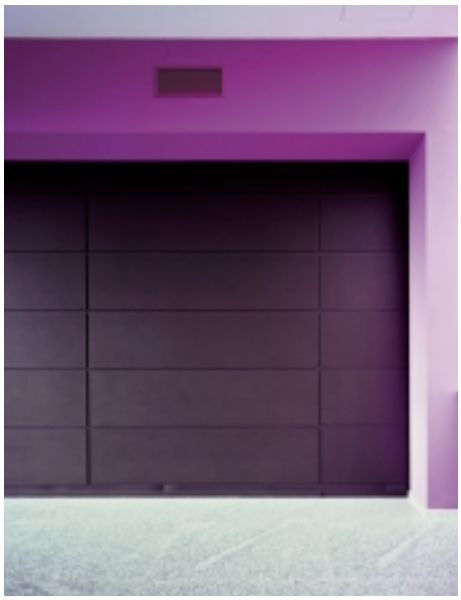
Material: fibre cement, Natura
Fixing: screwed
Design: de Architekten Cie., Amsterdam
Construction: Lindner Holding KGaA, Arnstorf
Photos: Linus Lintner, Berlin

To enliven the interior of the Jakob-Kaiser-Haus, part of Berlin's new government complex, Dutch architects de Architekten Cie. from Amsterdam chose Eternit Natura panels in dark blue. The 8 mm thick, non-combustible panels possess the necessary durability and are suitable for public buildings with stringent fire-safety requirements. The high-quality aesthetic is reinforced by backing the joints with stainless steel strips and by alternating the fibre cement panels with wooden ones, giving a rhythm to the interior walls. The consistent use of large-scale fibre cement panels provides a clue to the building's refined structural system. Behind the panels, which are reversible and mounted on an aluminium subconstruction, there are U-section shafts of in-situ concrete that rise the full height of the building and bear structural loads. In the atria, the fibre cement bands can be seen to continue from level to level, conveying the rhythm of the structural system. The consistent material and colour concept, which uses a small number of well-coordinated components, lends the building an air of quality that is reinforced by careful detailing.



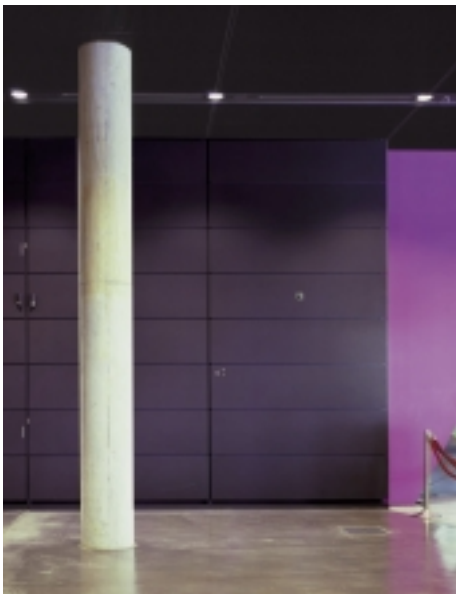
Non-Standard Detail – Vertical Section

Haus der Geschichte, Museum, Stuttgart



Wall cladding: anthracite, throughcoloured

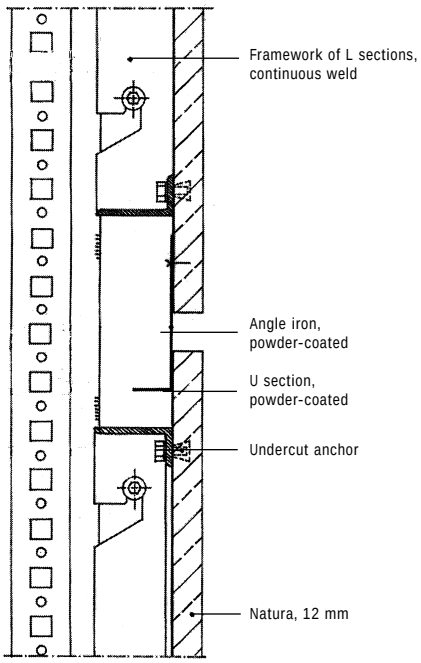
Aligned wall and door cladding



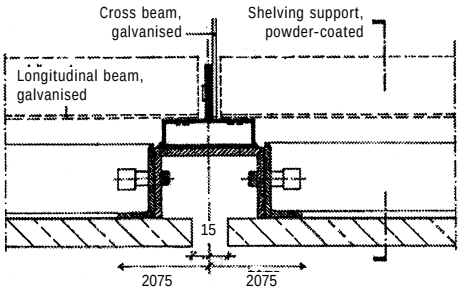
Panels can be replaced with cabinets

Material: fibre cement, Natura
Fixing: Eternit-Tergo
Design: Wilford Schupp Architekten GmbH, Stuttgart
Construction: Dietrich Display GmbH Messebau, Friolzheim
Photos: Dietmar Strauss, Besigheim

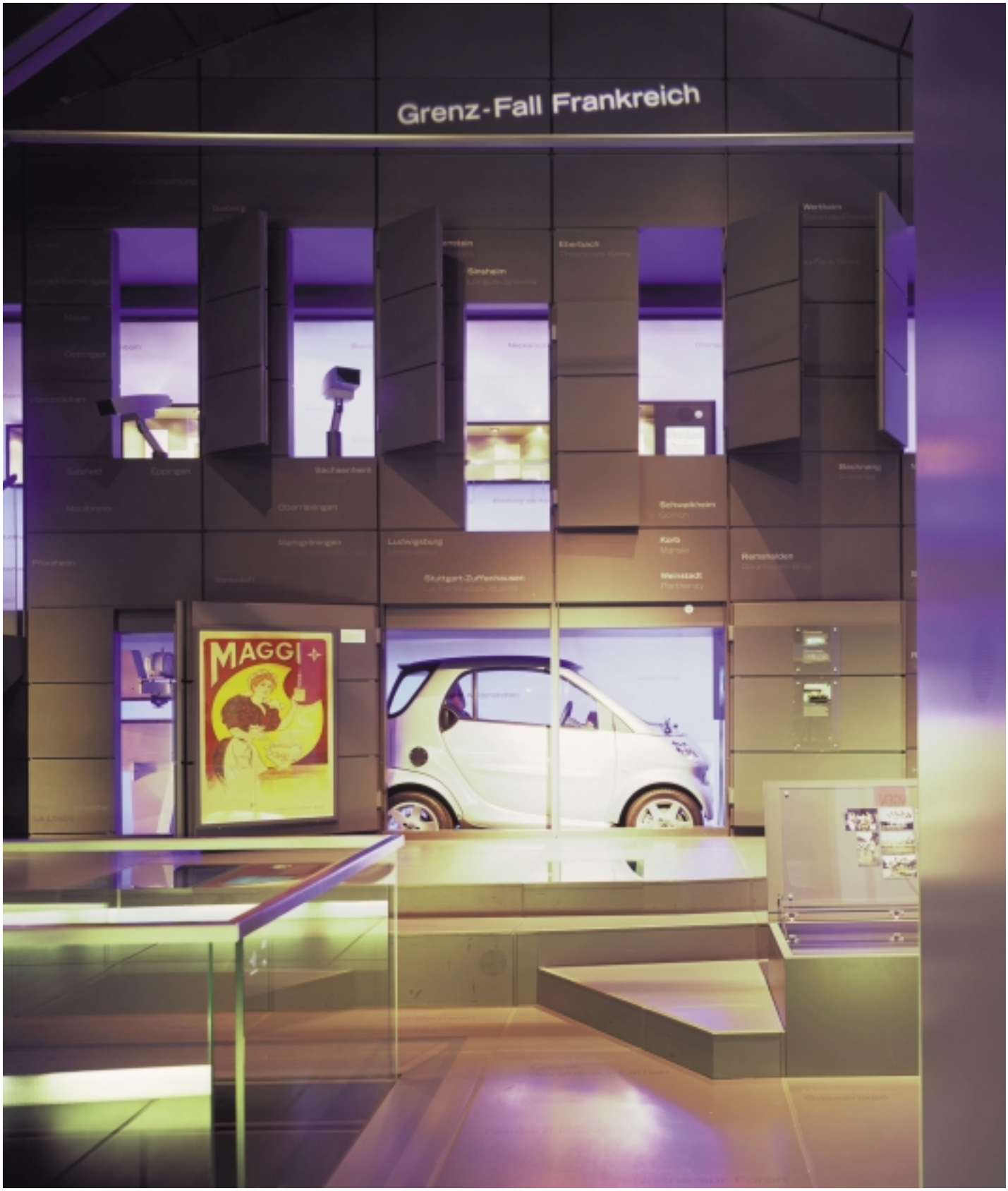
In the new building for the history museum in Stuttgart, care was taken to design an interior that would communicate an identity of its own and thus be perceived as a clearly separate concept from that of the neighbouring State College of Music and Performing Art. Anthracite-coloured floor, wall and ceiling coverings were chosen in order to create a neutral environment. In its appearance and material consistency, the pigmented, monolithic surface of the fibre-cement panels creates the effect of a neutral passepartout. The designers of the exhibition spaces adopted the principle of the black box. Fibre-cement panels are well-suited to this purpose, not only because of their visual qualities, but also because they are classed as non-combustible (A2-s1,d0). To mount them, the architects opted for concealed fixings on the rear of the panels. This was achieved using the Eternit Tergo system with undercut anchors. Since they can be demounted easily, the fibre-cement panels can be replaced with fitted display cases matching the same modular system.



Non-Standard Detail – Vertical Section



Horizontal Section


Grenz-Fall Frankreich
MAGGI

Innovation Campus, Wolfsburg

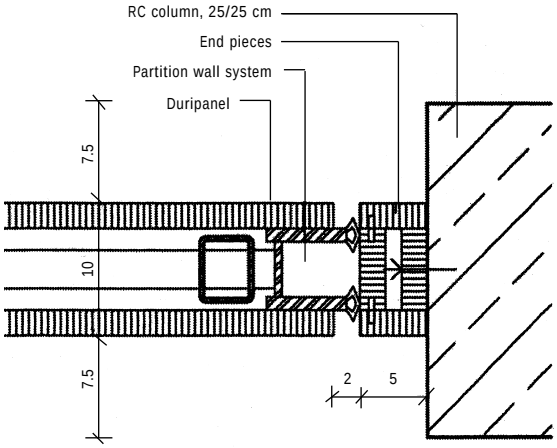
Partition walls and interior door with Duripanel

Duripanel as wall cladding

Recessed cupboard with Duripanel doors

Material: Duripanel, cement bonded particle board
Fixing: concealed, with panel hangers
Design: O.M. Architekten, Braunschweig
Construction: Lindner Holding KGaA, Arnstorf
Spoma Parkett und Ausbau GmbH, Magdeburg
Photos: O.M. Architekten, Braunschweig

Wolfsburg Innovation Campus is part of the Forum Auto Vision project, in the west of the town of Wolfsburg. The six buildings for business start-ups each have four storeys and are 17 m wide, with different lenghts. Between them are courtyards that have been given different themes. They are reinforced concrete-frame structures, clad in a variety of materials (cement particle board, wood, brick and metal) with loggias and balconies to punctuate the regular rhythm of the façades. The buildings' external treatment also serves to indicate their different uses. Inside, however, they have been given a feeling of unity by the use of the same materials throughout. The light partition walls used on the Innovation Campus are constructed with Duripanel cement bonded particle board fitout panels and transparent glazing units. Its homogenous and lively surface, its robustness and its ease of handling make Duripanel the ideal material for expressing the architectural concept for the Innovation Campus. The surface of the Duripanel board was varnished after installation.

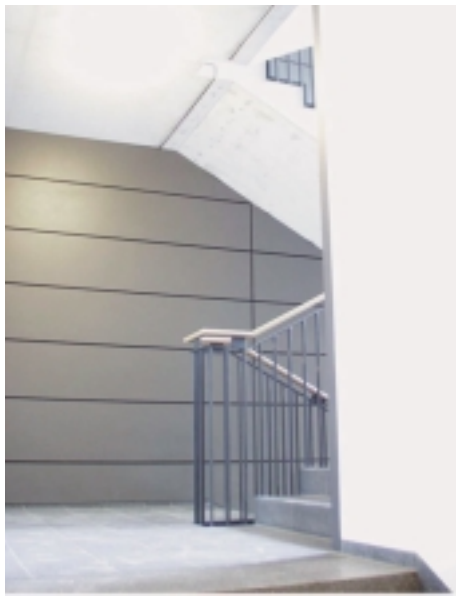


Non-Standard Detail – Horizontal Section
Partition-Frame Connection

Stair Extension to Brandenburg Technical University, Cottbus

Exterior elevation BTU

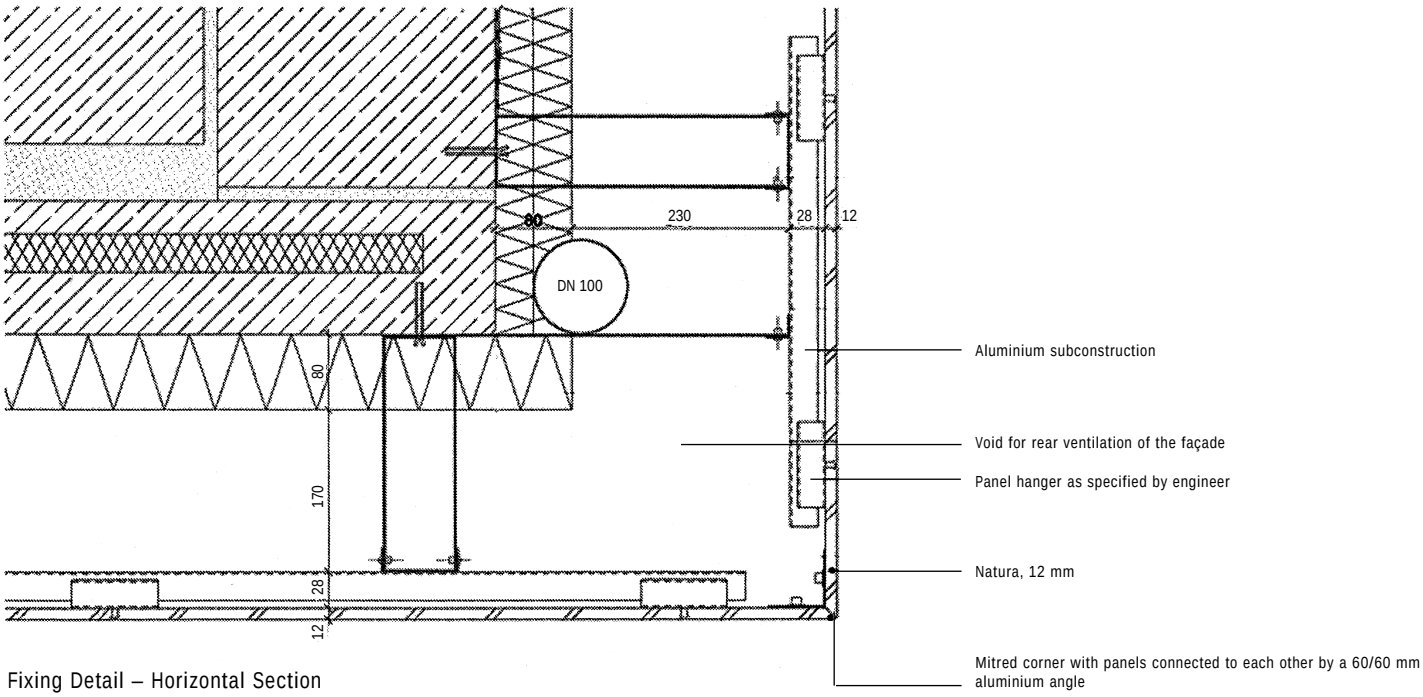
View into the stairs area



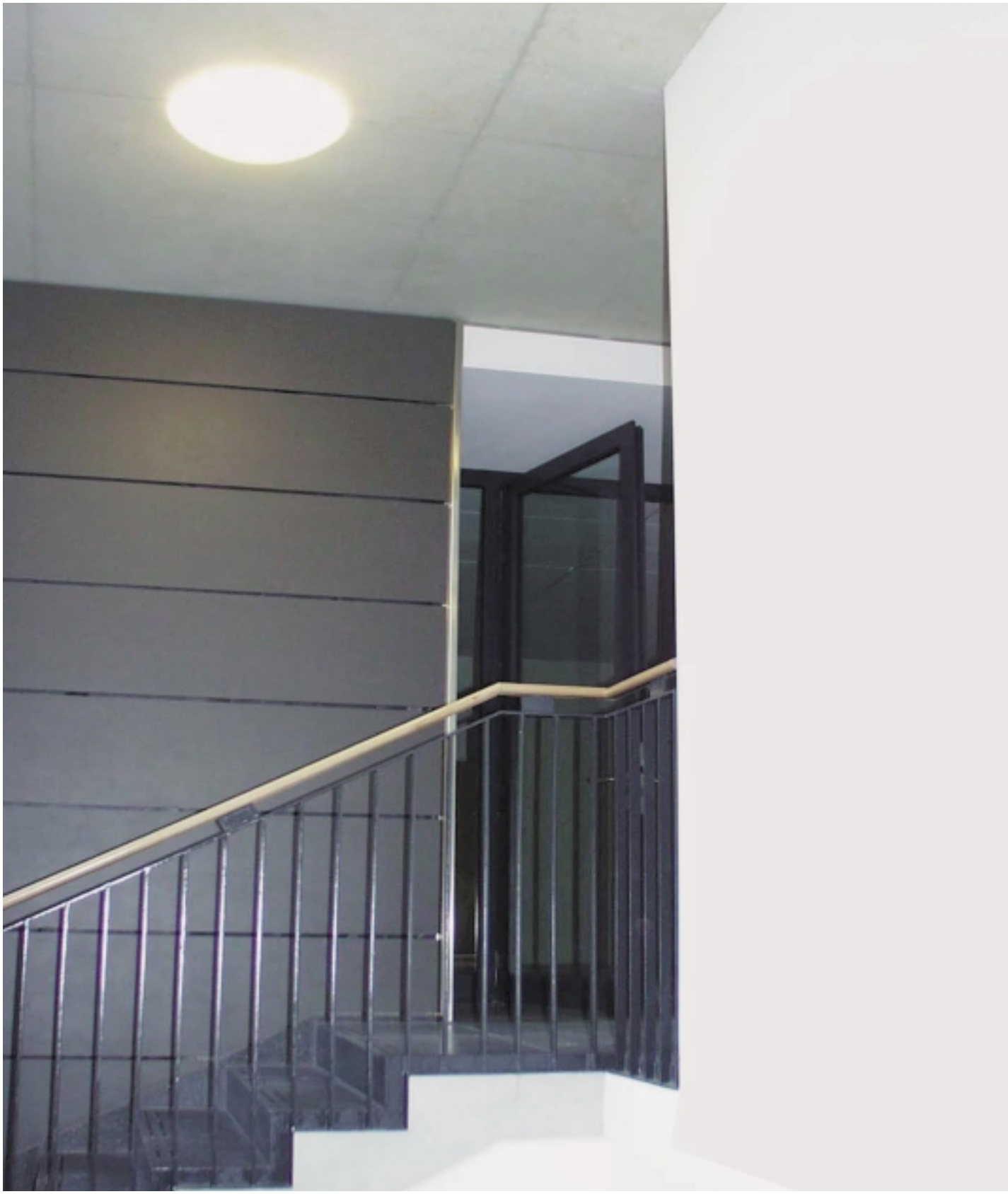
Wall cladding, fixed with Eternit-Tergo

Material: fibre cement, Natura
Fixing: Eternit-Tergo,
Design: Architekturwerkstatt, Cottbus
Construction: G + H Montage GmbH, Dresden
Photos: Architekturwerkstatt, Cottbus
Eternit AG, Gisela Jugel

The extension to teaching block 2 a/b of Brandenburg Technical University in Cottbus is located at one end of the existing building. It is linked to it by a glazed circulation space, the façade of which is recessed to articulate the joint between old and new. Containing stairs and a lift, it also provides access for the disabled to the entire complex. The two parts of the extension are very similar in their construction, both consisting of a steel frame with a post-and-rail curtain wall. The impression of the circulation space as a joint is strengthened by continuing the fibre-cement cladding of the extension's façade through the interior.



Fixing Detail – Horizontal Section



Dresden Airport

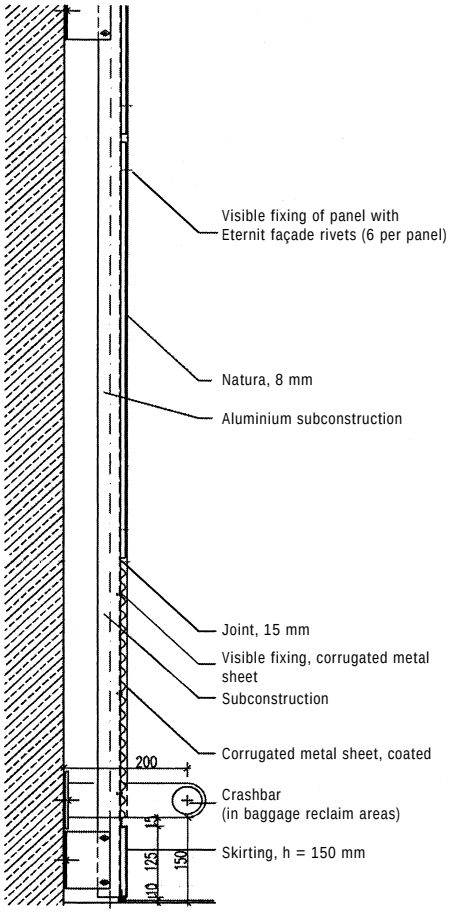
Wall cladding with Natura

Wall cladding at the terminal exit

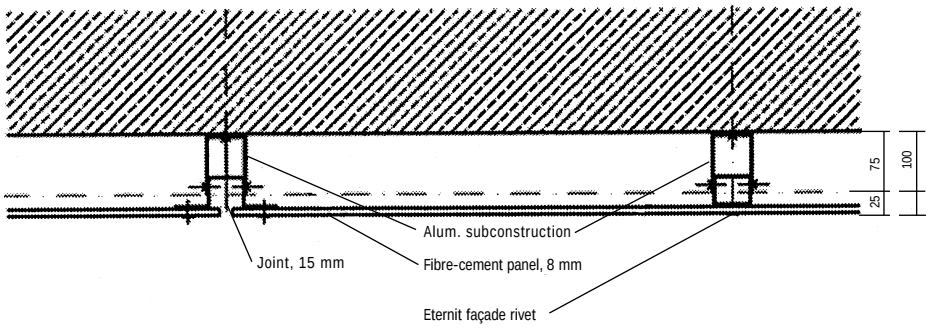
Wall with integrated fire extinguisher

Material: fibre cement, Natura
Fixing: riveted
Design: Blees und Kampmann, München
Construction: G + H Montage GmbH, Dresden
Photos: Grit Dörre, Dresden

Dresden Airport's triple-span hall was built in the 1950s. The high volume of traffic made increasing its capacity a matter of urgency. Planners Blees und Kampmann took up the challenge of converting it to provide Dresden airport with a modern terminal that is capable of dealing with around 3.5 million passengers per year. Since it was important to make the terminal an attractive environment for passengers, they decided to clad the interior walls with fibre-cement panels. As well as having a clean, efficient appearance and a pleasant surface texture, the panels are classed as non-combustible (A2-s1,d0). They are fixed by riveting onto an aluminium subconstruction. The Eternit façade rivet used for this is the uncoated model. The head has a metallic appearance that accentuates the rhythm of the panel grid. The use of corrugated metal sheet to suggest a plinth provides contrast and gives the wall a dynamic, horizontal character. All joints are 15 mm wide, which underscores the fact that the wall is clad in modular units.



Wall Construction – Vertical Section



Detail: Fixing onto Aluminium Subconstruction with 15 mm Joint – Horizontal Section


Ausgang/
Gepäckausgabe
exit/baggage claim

University Clinic – New Medical Clinic Building in Heidelberg

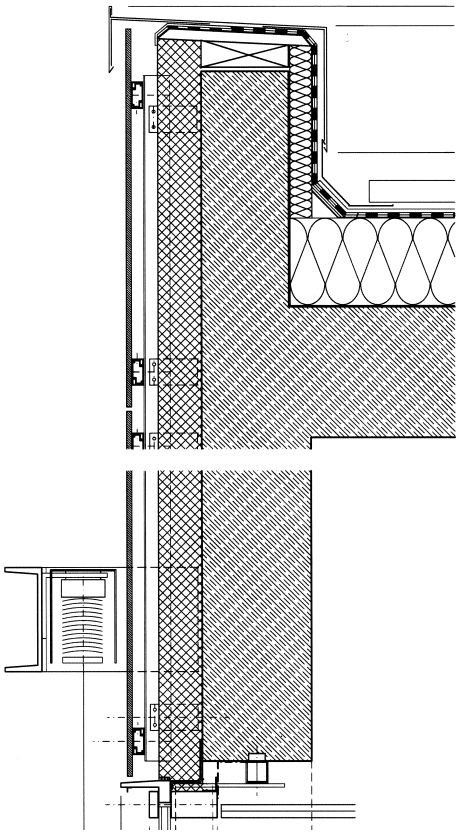
Exterior of the University Clinic

Transition from façade to interior

Entrance lobby landscaping

Material: fibre cement, Natura
Fixing: Eternit-Tergo
Design: Arcass Gesellschaft für Bauplanung mbH, Stuttgart
Construction: G+H Montage mbH, Ludwigshafen
Photos: Eternit AG, Carsten Mittmann

The new building for the Medical Clinic of Heidelberg University is visibly state-of-the art in both its architecture and its interior design. The rooms for treating patients and the staff offices are friendly, well-lit, and equipped with the latest medical and scientific technology. The design of the lecture theatres and seminar rooms allows students to be closely involved in actual medical practice. All this contributes to the fulfilling the stringent demands of a modern university clinic. In selecting building materials and technologies, the client and the designers put special emphasis on criteria relating to environmental health and the conservation of resources. This favoured the choice of fibre-cement panels from Eternit (Natura) as rear-ventilated external cladding. The shear wall that projects from the façade continues with the same cladding indoors, dividing the building into different zones. Fibre-cement panels from Eternit are certified as environmentally-friendly building products by the AUB, a building industry standards organisation. The façades of the clinic's internal courtyards have also been clad with fibre-cement panels.



Detail: Façade – Vertical Section

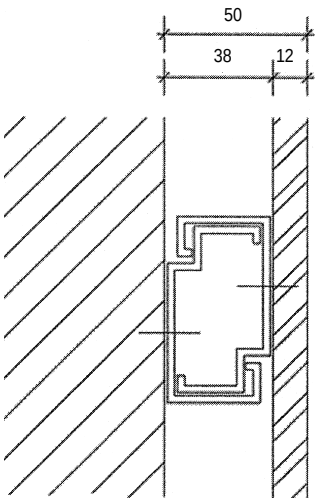
Hardehausen Youth Centre, Warburg

Entrance hall

Interior

Material: fibre cement, Natura
Fixing: Eternit-Tergo
Design: Bieling & Bieling Architekten BDA, Kassel
Construction: Jäger Akustik GmbH & Co. KG, Paderborn
Photos: Bieling Architekten, Kassel

Hardehausen Youth Centre is housed in an old Cistercian monastery. The entrance area, which was dark and too small for the building's new use, was remodelled as part of the conversion, talking into account the building conservation requirements. The new design concept opens up the entrance over several floors to make a spacious hall around which the circulation space is arranged in a manner suggestive of a mediaeval cloister, but with a modern vocabulary. This creates visual links between the open spaces on different floors. The glazed bridges of the upper floors and the suspended red box are especially eye-catching. The box is clad with red-pigmented Eternit fibre-cement panels, using the Eternit Tergo concealed-fixing system. Panel hangers are fixed to the raer of the fibre-cement panels with undercut anchors, allowing them to be hung on the aluminium subconstruction. The combination of horizontal and vertical panels creates a lively composition out of the pattern of joints, giving a visual structure to the surfaces. Inspection panels and recessed spotlights are skilfully integrated.



Detail: Fixing Sytem – Vertical Section

"Floating" fibre-cement box with inspection panel and recessed spotlights

Sparkasse Bank Lobby, Biberach

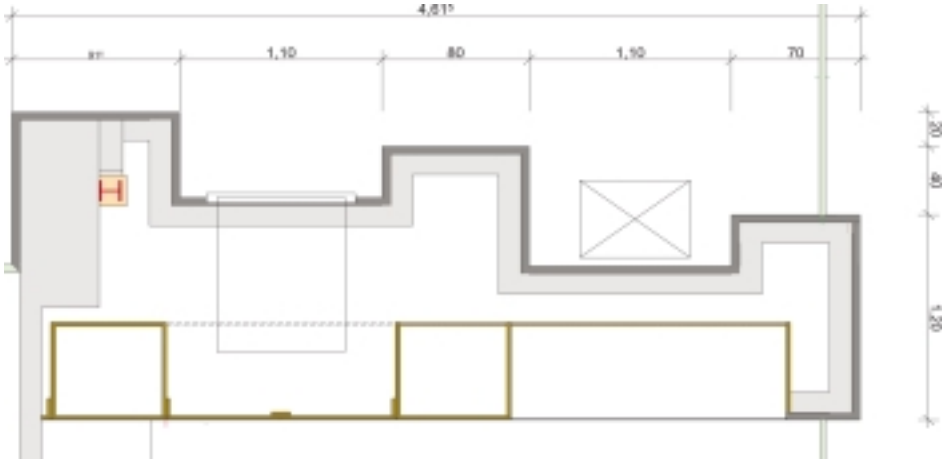
Lobby with ATMs

Transition from lobby to bank hall

Material: fibre cement, Natura
Fixing: Eternit-Tergo
Design: Wussler-Wussler-Grimm, Biberach
Photos: wwg-Architekten, Biberach
Eternit AG, Carsten Mittmann

As part of the complete renovation of the Sparkasse bank in Biberach, architects Wussler-Wussler-Grimm gave the banking hall and the entrance lobby a new, modern look. The two funtional zones, one a staffed service area and the other for self-service ATMs, are brought together by a wall like a sculpted block, clad with Eternit fibre-cement panels. It lets the spaces flow into each other in a way that encourages communication between staff and customers. At the same time, a series of recesses and projections in the self-service area create privacy zones for the cash dispenser and the bank statement printer. Building the ATM into the space behind the cladding has allowed the clear forms created by the floor-to-ceiling fibre-cement panels to achieve maximum effect. The use of a large format gives an impression of strength and solidity. The full-height panels are fixed at the rear onto an aluminium subconstruction using the Eternit-Tergo system.

Built-in cash dispenser



Plan of entrance area wall, with ATMs in projections and recesses

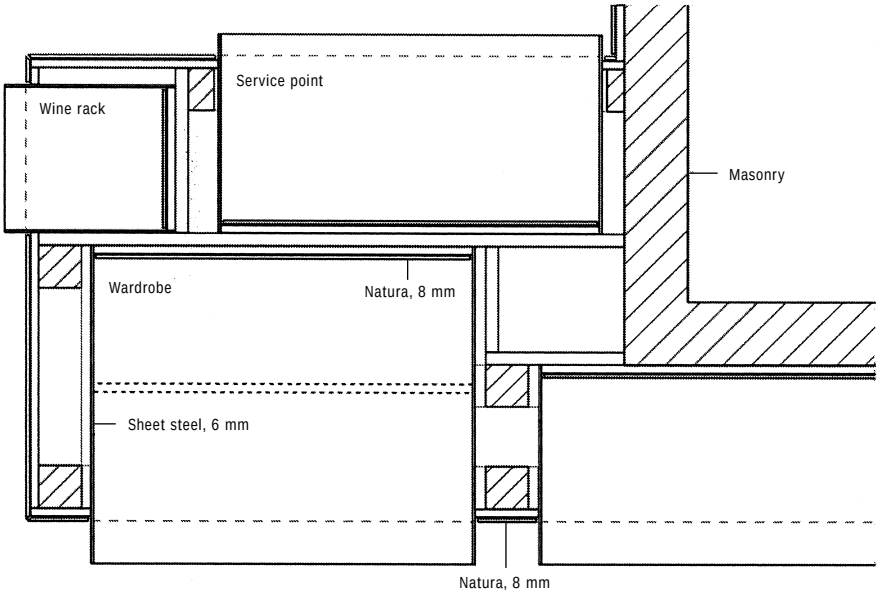
Küchenwerkstatt Restaurant, Hamburg

Dining area

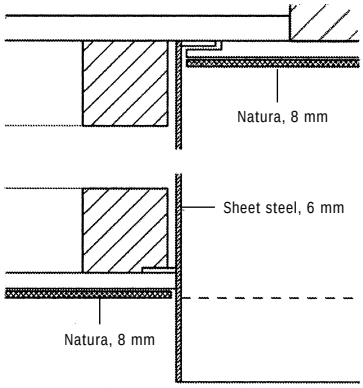
Bar area

Material: fibre cement, Natura
Fixing: adhesive
Design: Planungsbüro Goss, Hamburg
Construction: Fa. Lange, Hamburg (cutting)
Fa. Lars Schmidt, Hamburg (fitting)
Photos: Planungsbüro Goss, Hamburg

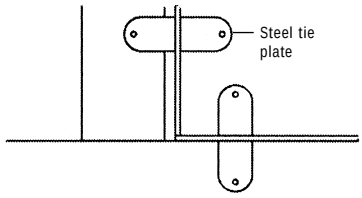
The Küchenwerkstatt restaurant in Hamburg is located in the converted ferry terminal at Mühlenkamp. The old building had lost much of its original atmosphere owing to numerous structural and technical alterations. The designers proposed restoring the turn-of-the-century materials and decorations, while counterpointing them with a new fitted unit that would house all of the technically and functionally necessary services and equipment. This new piece consists of five interpenetrating volumes made of Eternit panels, which also appear to interlock with elements of the existing interior. Deep-set rectangular steel frames continue the play of volumes and surfaces, framing cut-aways that create space of various fixtures. The restained material character of the natural grey fibre-cement panels in combination with steel and oak fitted furniture creates a canon of materials and forms that is not at all out of place in the original interior. The Eternit panels are bonded to a timber shell. Their corners are mitred so as to reinforce the impression that the unit consists of self-contained volumes.



Non-Standard Detail – Horizontal Section



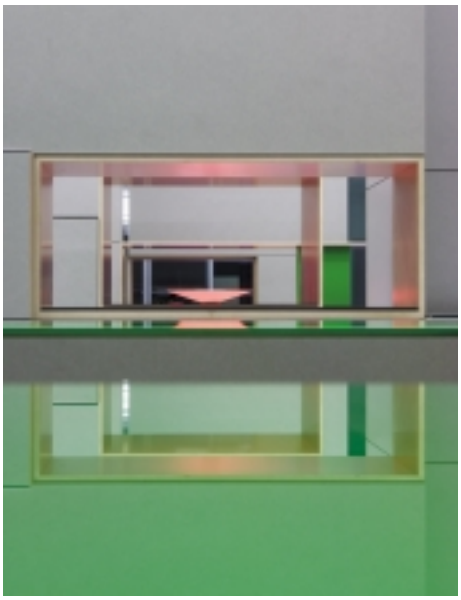
Non-Standard Detail – Horizontal Section



Non-Standard Detail – Elevation

Eternit AG, Heidelberg

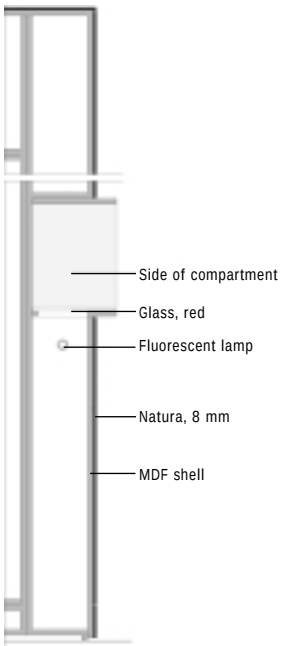
Seminar room



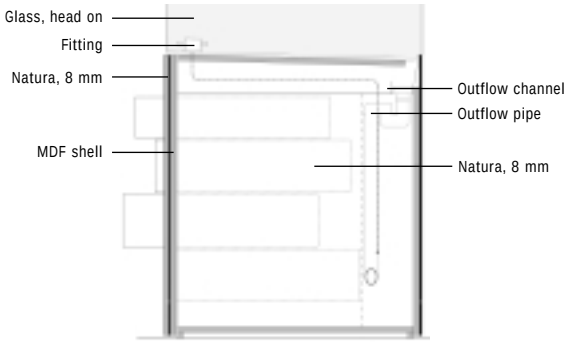
Exhibition

Material: fibre cement, Natura
Fixing: adhesive
Design: Astrid Bornheim, Berlin
Construction: Cabinetmaking Follenius & Martin, Berlin
Photos: David Franck, Stuttgart

The showroom and training centre for Eternit in Heidelberg are conceived as a laboratory for ideas, a workshop for designs and as architecture for activities. The idea behind the design was to show how fibre cement can be used to define space. The reception desk gives a foretaste of what is to come in the suites of rooms inside. Carefully framed views reveal the play of different spatial depths. Fibre cement is not just the material setting the stage for communication and action; it is simultaneously the passe-partout and the exhibit. The products in the showroom are not presented as they would be at a run-of-the-mill trade-fair stand, instead they invite visitors to discover the world of Eternit. Thus the objects (corrugated sheets, roofing sheets, façade panels and concrete tiles) are displayed in fibre-cement containers, which in turn are seamlessly integrated into the architectural elements. The only material visible here is the same raw material from which all of the other products have been manufactured, in the form of 8 mm fibre-cement panels. These panels, in sizes up to 3,100 mm high and 1,250 mm wide, are bonded to shells of MDF panels. They are used as wall surfaces, doors and tabletops. Water-jet cutting made it possible to create free forms and make incisions in the panels. Exceptionally precise workmanship was needed to achieve the filigree pattern of lines on the surfaces, which required joints of a mere 3 mm in width.



Cloakroom Unit – Vertical Section



Kitchen Unit – Vertical Section

Freitag F-lagshipstore, Hamburg

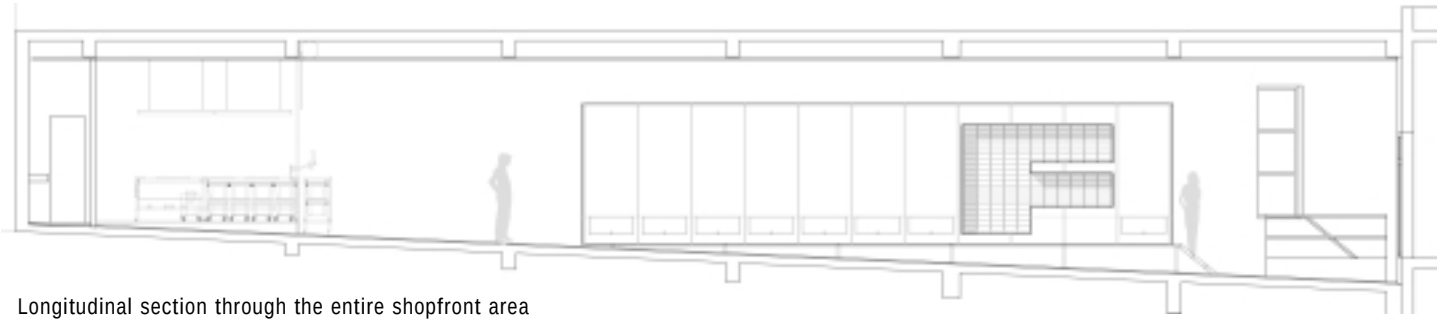
Bags stored in shelving

Floor, walls and ceiling of Duripanel

Shop as a mobile Box

Material: Duripanel, cement bonded particle board
Fixing: screwed
Design: Blauraum Architekten, Hamburg
Construction: Cabinetmaking Mehling GmbH, Moorrege
Photos: Oliver Heissner, Hamburg

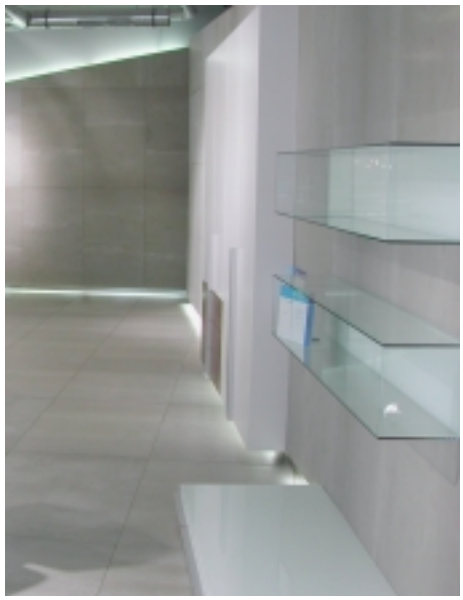
The brief for the F-lagshipstore of bag-manufacturers Freitag in Hamburg specified that the shop concept should be economical and relevant to the product. The central element of the design in the product presentation area resembles a long freight container. Set level on a simple steel frame, it is constructed of Eternit Duripanel cement particle board panels and has a reflective exterior. This causes the surface of the container to seem to vanish in reflections, thus directing the attention of passers-by to its interior. The product container has the standard format of a “high cube container” (12.2 x 2.5 x 2.9 m). This association with articulated trucks links it nicely to the Freitag company’s bags, which are manufactured from cargo truck tarpaulins. The container was assembled from eleven prefabricated Duripanel modules. These were screwed onto o timber subconstruction. The design makes good use of the versatility of the material. The floor, wall and ceiling, made of Duripanel boards painted after mounting, create an unexpected and unforgettable space.



Longitudinal section through the entire shopfront area

massgenau Showroom im Stilwerk, Stuttgart

Shop with indirect lighting



Floor and wall covering of Duripanel

Material: Duripanel, cement bonded particle board, unpolished
Fixing: concealed, with hanger rails
Design: massgenau, Stuttgart
Construction: massgenau, Stuttgart
Photos: massgenau, Stuttgart

The massgenau company manufactures bespoke furniture. In order to give the business a visible public presence, it was decided to set up a showroom in the Stilwerk centre in Stuttgart. Unpolished Duripanel cement particle board from Eternit was used for the fitout. In appearance and feel, the material conveys an impression of straightforward reliability. A special atmosphere has been created by combining it with wood, glass, painted surfaces and other materials. Indirect lighting is used with light strips judiciously placed beneath the objects on display to make them look as though they are floating. This deliberately buoyant appearance is particularly effective with glass objects. The Duripanel boards used here were rear-mounted on hanger rails and the visible surfaces painted after installation.

'Floating' shop counter

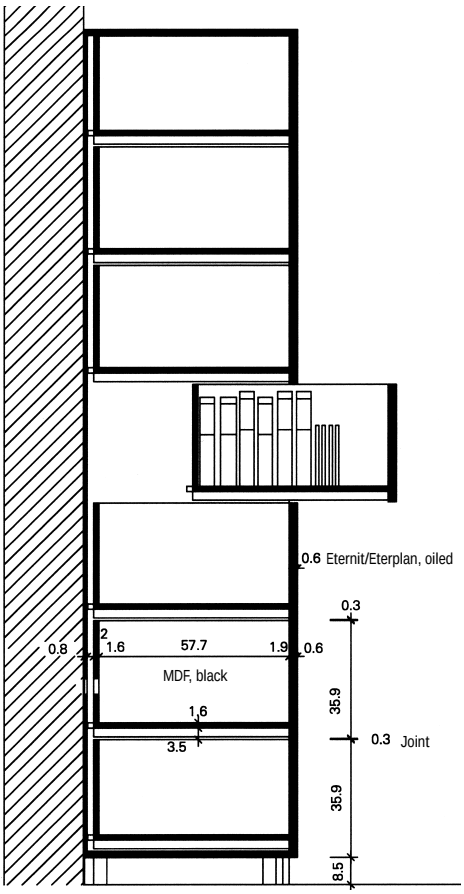
Customer seating area

Video Archive Wall Cupboard, Düsseldorf

The front of the drawers is faced with Eterplan

Material: fibre cement, Eterplan, oiled
Fixing: glued to MDF shell
Design: hpk + p, Düsseldorf
Construction: Carpentry Förster, Düsseldorf
Photos: hpk + p, A. Oemichen

The wall cupboard was built to store video cassettes of various sizes. Rather like a traditional dispensing chemist's medicine cabinet, its drawers are deeper than usual, providing space for approximately 3,500 cassettes. The designers wanted to create a monolithic surface that could also be seen as a wall, so they did without handles, fitting the drawers with push-push latches instead. To ensure that the joint grid was perfectly uniform, the Eterplan facing was not glued on until after the fitting of the cupboard was complete. Eterplan is especially suitable for constructing objects designed to look monolithic. It is characterised by the rough-textured, non-uniform appearance of fibre cement. The surface is open-pored and susceptible to dirt, so Eterplan should always by given a protective coating. In this case, the surface was oiled.



Vertical Section

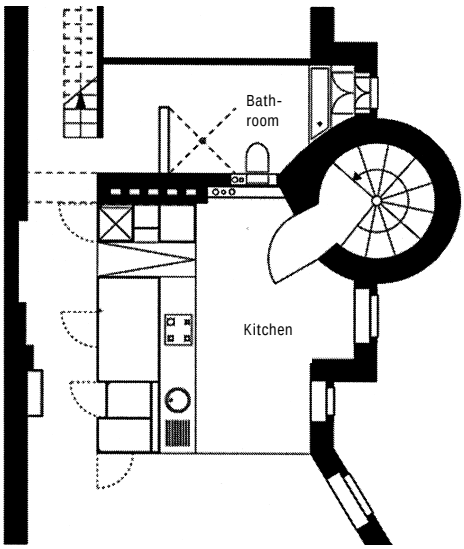
Opened drawers

Kitchen, Berlin

View of the worktop area

Material: fibre cement, Natura
Fixing: glued to MDF shell
Design: Gruber + Popp, Berlin
Construction: Cabinetmaking Follenius & Martin, Berlin
Photos: Hanns Joosten, Berlin

Kitchen units that create spaces



Plan

'Stargazer' is the name given by Berlin architects Gruber + Popp to their conversion of part of a nineteenth-century building to suit a more open, modern lifestyle. To this end, they demolished a number af walls within the top-floor apartment and remodelled the loft above as a place for 'stargazing'. The resulting space, of approximately 50 sq.m., has been given a focus and spatial structure by a large, free-standing piece of fitted furniture. This functions both as a kitchen unit and as a walk-in wardrobe. Composed of rectangular forms, it divides the main room into two, creating 'spaces within a space'. To enphasise this character, the architects decided to use a material associated with external façades. They chose fibre-cement panels from Eternit, since these are particularly noted for the tactile quality of their constituent material, low dirt adhesion and high impact resistance, all of which make them well suited to use in interiors. The various large, anthracite-coloured, fibre-cement panels cover fixed elements and even doors.

Wood Cement

Wood cement is a modern, environmentally-friendly material for high-quality cladding panels and interior lining boards. Like natural wood, it is free of formaldehyde. It is produced from European softwoods using cement as a binder, without the use of chemical preservatives. Duripanel is a three-layer cement bonded particle board for use in modern timber construction and timber frame construction, interior linings, dry screeds and hollow floors.

Duripanel Structura panels from Eternit are permanently weatherproof and UV-stable, thanks to their heat-laminated pure acrylate coating. Duripanel Structura panels are manufactured in a thickness of 12 mm, while the ready-primed panels of the Duripanel Elementa range are available in 12, 16 or 18 mm.

The large-format panels, up to a maximum installed size of 3,100 x 1,250 mm, make a wide variety of design solutions and layouts possible.

As wall cladding they are fixed with Eternit façade screws on timber subconstructions. The screws are available in a plain metal finish, or in colours to match the panel surface. Cement bonded particle boards from Eternit are fire-resistant. They fulfil the highest standards of physical performance and fire safety (building material class DIN 4102-B1, i.e. B-s1,d0 according to EN 13501-1). As an ideal cladding for rear-ventilated rainscreens, a proven construction system, they can be used in conjunction with a timber subconstruction on façades of up to approx. 20 m in height. For timber-frame buildings too, as well as façades with weatherboarding and even interiors, Duripanel Structura panels from Eternit open up attractive design possibilities.

Tested for Environmental Compatibility

Duripanel Structura panels from Eternit are ideal for sustainable architecture an interior design concepts. They satisfy the stringent ecological standards set for environmentally-friendly building materials in every respect. From the manufacture of the panels without chemical preservatives to their suitability for recycling, Eternit's research teams have ensured that Duripanel Structura is environmentally friendly. This is why it has been awarded the building biology seal of approval by AUB e.V., an industry working-group on environmentally compatible building products.

ARBEITSGEMEINSCHAFT UMWELTVERTRÄGLICHES BAUPRODUKT. E.V.

Material Properties

Duripanel Structura

Colour-coated cladding panels of wood cement composite offer ideal structural performance and are

- **fire resistant, B-s1,d0 (EN 13501-1)**
- **weatherproof and frost-resistant**
- **impermeable**
- **rot-proof**
- **impact-resistant**
- **shockproof and UV-stable**

Duripanel

Uncoated lining panel of wood cement composite

- **free of timber preservatives**
- **odourless**
- **high density material reduces noise**
- **suitable as a structural fire prevention measure**
- **minimal thickness swell**
- **outstanding moisture properties**

Eternit Structura and Natura Cladding Panels

Colour-coated cladding panels of compressed, naturally hardened fibre cement offer ideal structural performance and are

- **non-combustible, A2-s1,d0 (EN 13501-1)**
- **weatherproof and frost-resistant**
- **impermeable**
- **rot-proof**
- **impact-resistant**
- **shockproof and UV-stable**

Fibre Cement

Fibre cement is a modern, reinforced substance manufactured from natural raw materials. This technology is the fruit of more than twenty-five years of development, observation and experience in uncompromising laboratory and accelerated tests, as well as long-term wear and tear in real-life conditions on site. Many millions of square metres of fibre-cement products have been installed on roofs, façades and interior surfaces since 1980, withstanding even extreme climatic conditions.

Large-format fibre-cement panels for rear-ventilated rainscreen cladding and interiors have proven highly successful in everyday use. They consist of a non-combustible, highly compressed material composed of cement paste reinforced with fibres, which once hardened is weatherproof and retains its shape. The greatest proportion of its constituent raw materials is made up by Portland cement, a binding agent, which is produced by burning limestone together with clay marl. In order to optimise the product's properties, admixtures such as powdered limestone are added.

Synthetic, organic fibres made from polyvinyl alcohol are used as reinforcing fibred. Fibres of this sort are used in a similar form in the textiles industry for manufacturing clothing and protective fabrics, for non-wovens and for medical suture thread. Of great importance is their physiological safety.

During the manufacture of fibre cement, the process fibres serve as filter fibres. These are mostly cellulose fibres, like those used in the paper industry.

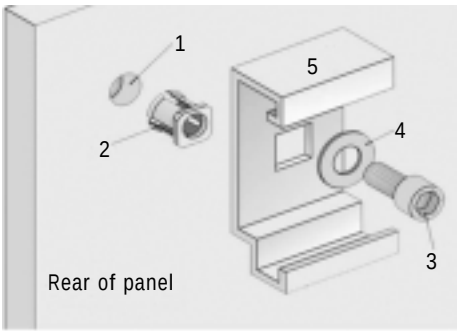
Air is also present, in the form of microscopically small pores. This micropore system results in a building material that is frost-proof, regulates humidity, 'breathes' and yet is waterproof.

Fibre cement products react in a completely neutral fashion to electromagnetic waves and radiation, so that radio waves, infra-red systems, paging systems and radar beams are not adversely affected. The industrially applied multiple-layer heat-laminated surface guarantees cladding panels with a consistently high standard of quality. They are non-fading and UV-stable. A sealing coat of equally high physical quality is applied to the rear of each panel. All of the cladding panels produced by Eternit AG are evaluated and certified as environmentally compatible and healthy building material (AUB certificates).

The above excerpts are taken from the current editions of "Planning & Installation: Cladding with cement bonded particle board", "Planning & Installation: Cladding with Fibre Cement" and " Planning & Installation: Cement bonded particle board". You can download the full text of these brochures in german at www. eternit.de, or order them using the order from page 51.

Eternit-Tergo for Concealed Rear Fixing

Eternit-Tergo is an interlocking, mechanical and approved concealed fixing system. Because of the need to drill holes, this interlocking type of fixing is only permissible with fibre-cement panels that are 12 mm thick. Fixing is by means of panel hangers or panel rails, which are hung on the aluminium subconstruction and secured against sideways slippage.

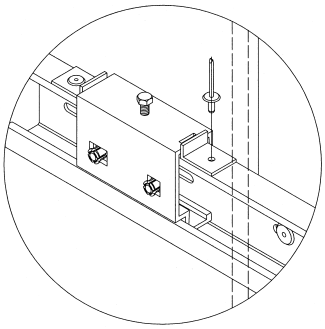


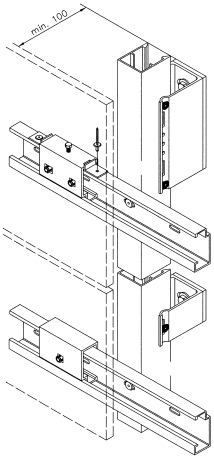
1 Drilled hole 2 Undercut anchor
3 Screw 4 Washer 5 Cladding hanger

Subconstruction with Cladding Hangers

Panel hangers conforming to the system are fixed to the rear of the panel, using Eternit undercut anchors. Thus prepared, the panels are hung on the horizontal supporting members (max. 4 m) of the subconstruction, aligned and secured firmly and permanently against sideways slippage, or creep, using specified fasteners. The horizontal supporting members should be interrupted every 4 m or so, in order to avoid misalignment of the joints from panel to panel as a result of too great an expansion by the aluminium section.

The dead load is borne by two adjustable fixing points. The minimum depth of the construction, from the front edge of the 12 mm thick cladding panel to the external face of the supporting wall is 100 mm.





Positioning the Fixing Holes / Supplementary Holes

The positions of the fixing holes depend upon:
- the format of the panel
- the type of subconstruction
- the structural stabilizy analysis of the façade
- the edge distances for pre-drilled undercut holes.

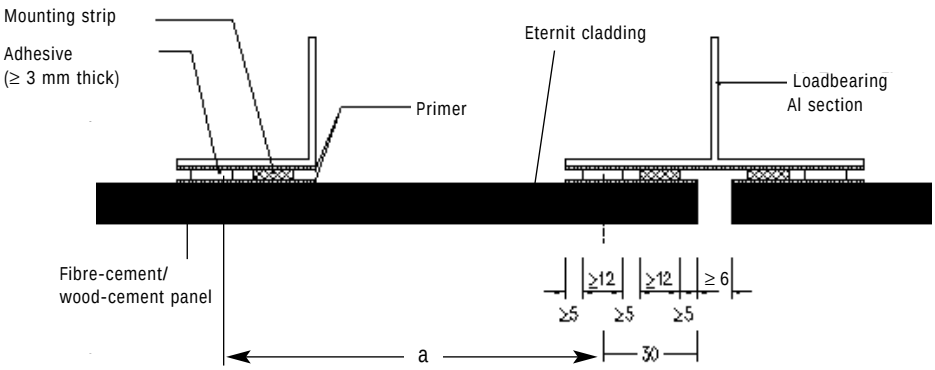
Recommended edge distances for planning hole positions: 100 mm.
Edge distances horizontally (i.e. to vertical edges) must lie between 50 mm min. and 100 mm max. and vertically (i.e. to horizontal edges) between 70 mm min. and 100 mm max.

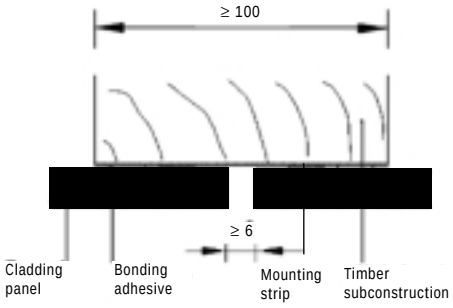
Edge distances in excess of 100 mm can have a negative effect on the apperarance, especially at cross-joints, because it can no longer be guaranteed that the panel edges will lie evenly in the same plane.
Fixing distances of ≤ 650 mm can be taken as a basis for the initial planning.

The undercut holes in the rear of the panels are pre-drilled at the factory. Additional holes may be drilled in workshop conditions on site using a mobile drill (KS-HV) and a special bit (F HM 8/10 12/0.5) manufactured by KEIL, Im Auel 42, D-51766 Engelskirchen-Loope, Germany (tel. +49 22 83 80 70, fax +49 22 63 80 73 33). The drill dust must be removed completety from the hole.
The geometry of supplementary holes is to be checked with a 8/0.5 gauge. If a hole is badly drilled, the distance betweeen it and any new hole must be at least 25 mm.

Structural Bonding, the Alternative Concealed Fixing to Eternit-Tergo

Structural bonding makes it possible to rear-fix panels as thick as ≤ 12 mm.
A particular advantage of using adhesives in this way for interiors is that panels can be bonded directly to a timber subconstruction (planed, with wood moisture content < 15%). It also allows bonding directly onto a load-bearing surface, since a 3mm-thick mounting strip for interiors creates a sufficient gap for rear ventilation. The bonded areas must always run vertically in such cases, with ventialtion slits at the bottom (inlet) and top (outlet). It is not possible to bond directly onto gypsum board. A framework of battens must be specified instead, both as supports and for ventilation. Structural bonding onto gypsum board is ruled out owing to its insufficient load-bearing properties. In making furniture, in contrast, adhesives are commonly used for fixing, and Eternit panels can be bonded directly onto the shell (e.g. MDF) of a fixture or piece of furniture.
To achieve permanent, concealed fixing of fibre-cement panels and cement bonded particle boards in interiors, in the form of rear-ventilated cladding, the bonding systems from the Hallschmid or MBE companies can be used. Certain climatic requirements must be met when handling or working the material. In preparing the back of the cladding panel and the supporting profile of the load-bearing assembly, the specified sequence of steps and times must be complied with exactly in order to ensure reliable fixing.
The cladding panels must not be pressed into contact with the mounting strip until they are in exactly the desired position. Subject to consultation with the adhesive's manufacturer, it can also be possible to bond onto other surfaces in interiors, such as timber battens or MDF boards.





Bonding directly onto a loadbearing substrate

Fixing Distances

Support spacings/fixing distances for 8 mm and 12 mm thick wood-cement particle boards or fibre-cement panels.

Thickness 8 mm

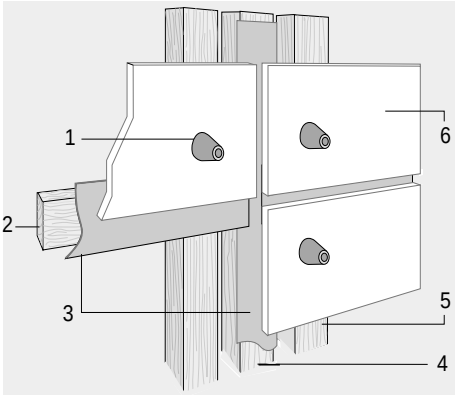
Panel width in mm	Horizontal support spacing in mm ≤ 8 m	
3,100	a =	4 x 760
3,000	a =	4 x 735
2,800	a =	4 x 685
2,500	a =	3 x 813
2,000	a =	3 x 647
1,500	a =	2 x 720
1,250	a =	2 x 595
1,220	a =	2 x 580

Thickness 12 mm

Panel width in mm	Horizontal support spacing in mm ≤ 8 m	
3,100	a =	3 x 1013
3,000	a =	3 x 980
2,800	a =	3 x 913
2,500	a =	3 x 813
2,000	a =	2 x 970
1,500	a =	2 x 720
1,250	a =	2 x 595
1,220	a =	2 x 580

Eternit Naxo, Visible Fixing with Stainless Steel Elements

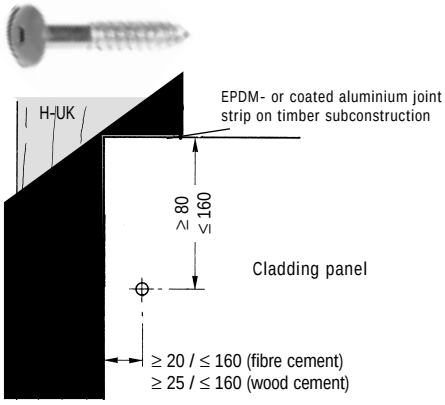
Eternit-Naxo is a combination of two high-quality materials: fibre cement/wood cement composite and stainless steel. The interplay of these two types of material can be used to give interiors a special design flair. Eternit Naxo also offers considerable freedom of design in combination with other fixing systems. The panels are to be pre-drilled with 6 mm holes for screw fixing. It is also possible to fix onto an aluminium subconstruction using rivets. Edge distances of 100 mm vertically and 100 mm horizontally emphasise the symmetrical appearance.



1 Naxo element
2 Horizontal batten
3 Joint strip
4 Vertical batten
5 Vertical supporting batten
6 Eternit panel

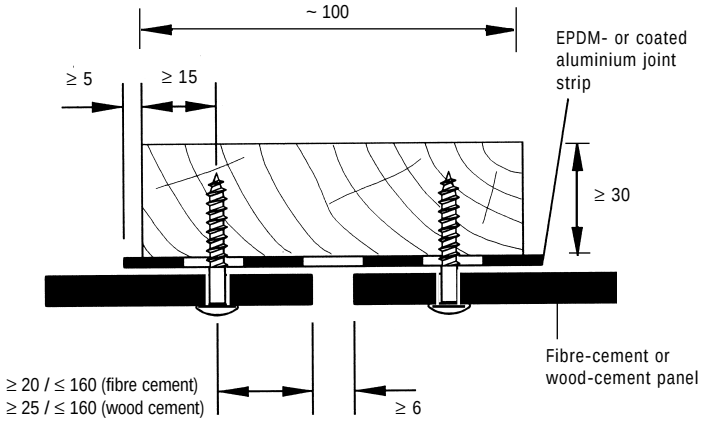
Screw Fixing with Eternit Façade Screws

The Eternit façade screw allows panels to be fixed visibly onto a timber subconstruction. The joints are backed with a black joint strip (aluminium or EPDM). The joint width max be reduced to 6 mm in interiors. The panels are to be pre-drilled with a 6 mm bit for screw fixing. When doing so, care must be taken to abserve the minimum edge distances of ≥ 20 mm horizontally and > 80 mm vertically. Screws are available in colours to match the cladding panels, or in plain metal finish.



Minimum distances on timber subconstruction

Fixing on a Timber Subconstruction in Interiors



The panels should be mounted such as to avoid displacement constraint. Changes of shape should not be able to create indirect loads that could damage the cladding or the subconstruction at ties and fixing points. When mounting panels on a timber subconstruction, constraint can be avoided by drilling all of a panel's fixing holes with diameters 2 mm larger than the shank diameter of the fasteners. For Eternit façade screws, the panels have to be pre-drilled at Ø 6 mm with the Eternit special bit for fibre cement.

Fixing Distances on a Timber Subconstruction

Panels laid vertically on vertical supporting battens (fibre cement)

	Panel Dimensions Height x Width x Thickness mm	Fixing Distances mm	
Fibre cement	2,500 x 1,250 x 8	horizontal a =	2 x 605
		vertical b =	3 x 780
	2,800 x 1,250 x 8	horizontal a =	2 x 605
		vertical b =	4 x 660
	3,100 x 1,250 x 8	horizontal a =	2 x 605
		vertical b =	4 x 735
	3,100 x 1,500 x 8 Structura	horizontal a =	2 x 730
		vertical b =	4 x 735

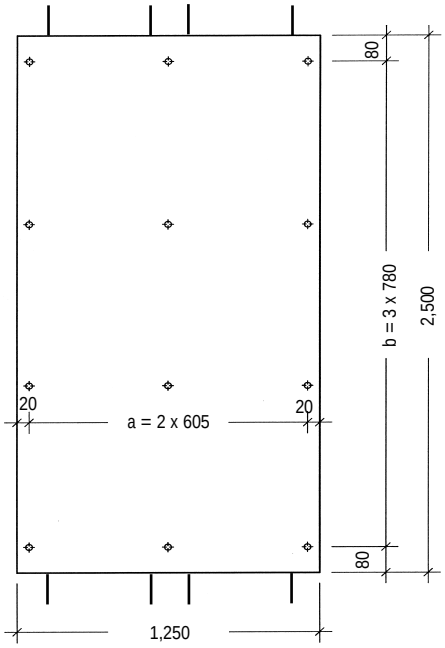
Panels laid vertically on vertical supporting battens (wood cement)

	Panel Dimensions Height x Width x Thickness mm	Fixing Distances mm	
Wood cement	3,100 x 1,250 12	horizontal a =	2 x 600
		vertical b =	4 x 735
	2,600 x 1,250 12	horizontal a =	2 x 600
		vertical b =	3 x 800
	3,100 x 1,250 16	horizontal a =	2 x 600
		vertical b =	4 x 735
	2,600 x 1,250 16	horizontal a =	2 x 600
		vertical b =	3 x 800
	3,100 x 1,250 18	horizontal a =	2 x 600
		vertical b =	4 x 735
	2,600 x 1,250 18	horizontal a =	2 x 600
		vertical b =	3 x 800

Example (fibre cement)

Parameters:
- timber subconstruction
- panels (fibre cement) laid vertically on vertical supporting battens
- panel format (H x W) 2,500 mm x 1,250 mm
- panel thickness 8 mm

From table (outlined):
a = 2 x 605 mm = horizontal fixing distance
b = 3 x 780 mm = vertical fixing distance



Wood cement:
Minimum edge distances
horizontal: 25 mm
vertical: 80 mm
Maximum structural fixing distance:
for t = 12 mm: horizontal und vertical ≤ 800 mm
for t > 12 mm:
horizontal und vertical ≤ 1,000 mm

Fibre cement:
Minimum edge distances
horizontal: 20 mm
vertical: 80 mm
Maximum structural fixing distance:
for t = 8 mm, a and b ≤ 800 mm
for t = 12 mm, a and b ≤ 1,020 mm

The fixing distances given here are for guidance only and have been calculated on the assumption of an adequately stiff subconstruction. They do not replace structural calculations.

Panels laid horizontally on vertical supporting battens (fibre cement)

	Panel Dimensions Height x Width x Thickness mm	Fixing Distances mm	
Fibre cement	1,250 x 2,500 x 8	horizontal a =	4 x 615
		vertical b =	2 x 545
	1,250 x 2,800 x 8	horizontal a =	4 x 690
		vertical b =	2 x 545
	1,250 x 3,100 x 8	horizontal a =	4 x 765
		vertical b =	2 x 545
	1,500 x 3,100 x 8 Structura	horizontal a =	4 x 765
		vertical b =	2 x 670

Panels laid horizontally on vertical supporting battens (wood cement)

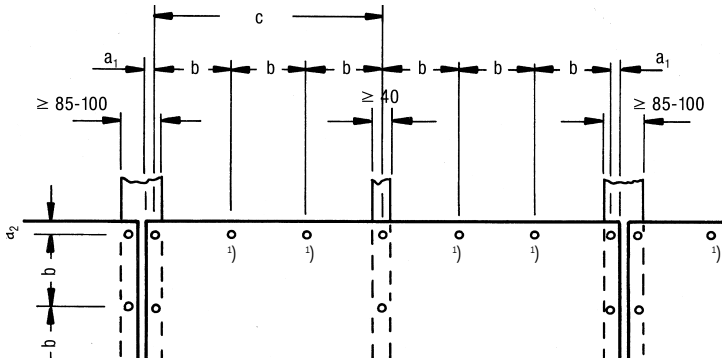
	Panel Dimensions Height x Width x Thickness mm	Fixing Distances mm	
Wood cement	1,250 x 3,100 12	horizontal a =	4 x 762
		vertical b =	2 x 545
	1,250 x 2,600 12	horizontal a =	4 x 637
		vertical b =	2 x 545
	1,250 x 3,100 16	horizontal a =	4 x 762
		vertical b =	2 x 545
	1,250 x 2,600 16	horizontal a =	3 x 850
		vertical b =	2 x 545
	1,250 x 3,100 18	horizontal a =	3 x 1.016
		vertical b =	2 x 545
	1,250 x 2,600 18	horizontal a =	3 x 850
		vertical b =	2 x 545

Fixing Duripanel to Unloaded Structures in Interiors

The fixing distances and support spacings given in the table below aooly to the cladding of unloaded structures such as ceilings, walls and dry linings. The use of Duripanel panels to stiffen or contribute to bearing loads always necessitates structural calculations, using the characteristic values specified in the approval. The load-bearing parts of a suspended ceilings are to be chosen and dimensioned such that the maximum permissible deflection is not exceeded. The same applies to the requirements for light walls, in particular with regard to stiffness and structural stability. The values apply to both timber and metal subconstructions.

Support Spacings and Fixing Distances:

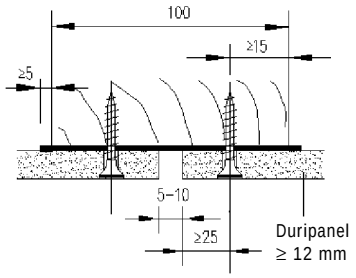
Fixing System	Board thickness in mm	Distances in mm			
		a_1	a_2	b[1]	c[2]
Screws for Duripanel B1 (Duripanel-I-Screw)	8, 10, 12	≥ 25	40	≤ 200	300 bis 415
	13, 16, 18, 19, 20	≥ 25	40	≤ 300	415 bis 625
	22, 24, 25, 28, 29	≥ 25	40	≤ 400 (200)[3]	≤ 700
	32, 36, 40	≥ 30	40	≤ 400 (200)[3]	≤ 800
Staples for Duripanel B1	12, 16, 18, 20	≥ 30	40	≤ 100	415 bis 625
	22, 24	≥ 30	40	≤ 100	≤ 625



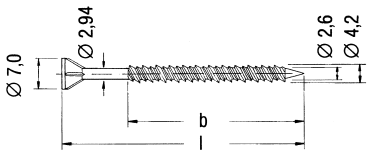
a_1 minimum edge distance for fixings along the long edges of the board
a_2 minimum edge distance for fixings along the short edges of the board
b distance between fixing centres
c distance between support centres

[1]) The dimension b applies parallel to all edges for ceiling structures and composite elements; in all other cases is applies only parallel to the members of the subconstruction.
[2]) The maximum support spacing c must be reduced accordingly in response to certain requirements (e.g. for ceiling structures), in other to guarantee that any deformation resulting from loading remains within the permitted tolerances.
[3]) The figures given in brackets are the maximum fixing distances if requirements pursuant to DIN 4103, Part 4 are stipulated for the timber subconstruction for non-loadbearing interior walls.

Screws:
Screw-fixing without predrilling is only possible with approved screws and the Duripanel-I-screw (edge distance ≥ 25 mm / screw spacing ≤ 200 mm).



Duripanel-I-screw for interior structures in conformity with approvals



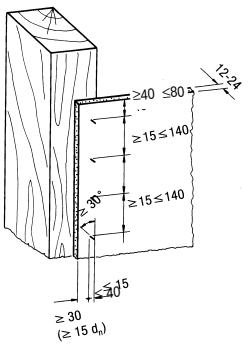
Material: tempered steel C_q 22_1 galvanized.
For timber frames of any type, especially for the manufacture of structural units in the prefabricated housing industry.

Characteristics: Self-tapping screw, slender countersunk head with cutting ribs; no need for predrilling or countersinking.

Filling-in over sunk screw heads
Before filling-in over the heads, make sure that no movement can occur at the point of fixing, now or in future. The screw heads are driven in slightly below the surface, a fibre pad is laid on top to seal them and topping compound is applied.

Filling compounds in drywalling/fitout
Emulsion polymer primers (ready-mixed), e.g.
Ardex P82 (Ardex Group)
Ardex P51 (Ardex Group)
Thomsit R 777 (Henkel Building Systems)
UZIN NC 405 (Uzin factory)

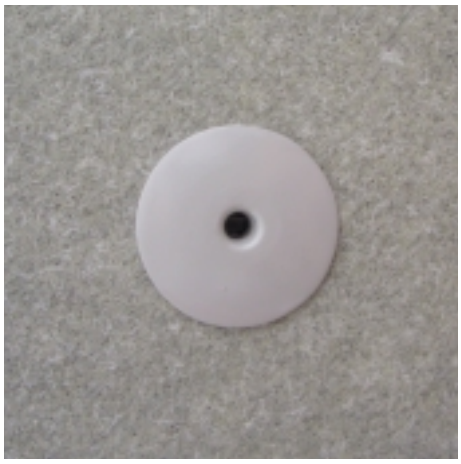
Staples:



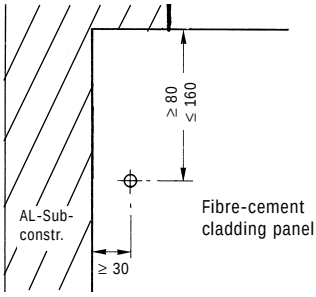
Only use staples that are proven suitable for this fixing and which are subject to continual production checks with regard to properties and performance (e.g. Haubold, Germany).
When using such staples for fixing, the egde distance should measure 15 d_n, given that the staple is driven in parallel to the edge of the board. The crowns of the staples must not project above the surface, but should not be sunk deeper than 2 mm below it. The effective driving depth must be at least 20 mm or 12 d_n.

Staple fixing is only permitted for Duripanel B1 in material thicknesses of between 12 and 24 mm. Stapling tools specified by the staple manufacturers should be used for driving in the staples. These should be set so that the staple crowns are flush with the board's surface.
The largest distance measurable between staples should not exceed 80 d_n for wood products and softwoods along the grain, and 40 d_n for softwoods across the grain.

Riveting with the Eternit Façade Rivet

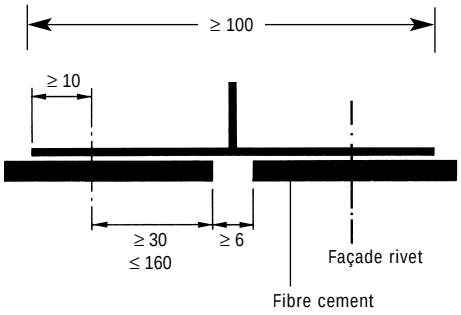


The Eternit façade rivet allows the visible fixing of fibre-cement panels onto a subconstruction of aluminium. The joint width may be reduced to 6 mm in interiors. The panels are pre-drilled for rivet fixing using a 9.5 mm bit. The edge distances of ≥ 30 ≤ 160 mm horizontally and ≥ 80 ≤ 160 mm vertically must be observed in doing so. With pre-drilled cladding panels, the Eternit drill jig bushing makes it easy to drill properly centred holes (Ø 4.1 mm) in the aluminium subconstruction. Rivets are available in colours to match the cladding panels, or in a bare metal finish.



Minimum edge distances on an aluminium subconstruction

Fixing Fibre Cement on an Aluminium Subconstruction in Interiors



Fixed point with fixed point sleeve:
Hole drilled in cladding panel Ø 9.5 mm and in subconstruction Ø 4.1 mm

Floating point:
Hole drilled in cladding panel Ø 9.5 mm and in subconstruction Ø 4.1 mm

An orderly appearance of the fixings is best achieved by pre-drilling the panels with precision to the closest millimetre. When fixing with rivets, all holes should be pre-drilled with Ø 9.5 mm. For pre-drilling panels on site in a laid-flat position (not laid on the subconstruction), we recommend using the Eternit special bit for fibre cement with Ø 9.5 mm. Pre-drilled Eternit cladding panels are to be fixed on an aluminium subconstruction with fixed and floating points. Fixed point sleeves are to be used to make two fixed points per cladding panel, connected to different supporting members.

Fixing Distances for Fibre Cement on an Aluminium Subconstruction

Panels laid vertically on vertical supporting members (fibre cement)

	Panel Dimensions Height x Width x Thickness mm	Fixing Distances mm	
Fibre cement	2,500 x 1,250 x 8	horizontal a = vertical b =	2 x 595 3 x 780
	2,800 x 1,250 x 8	horizontal a = vertical b =	2 x 595 4 x 660
	3,100 x 1,250 x 8	horizontal a = vertical b =	2 x 595 4 x 735
	3,100 x 1,500 x 8 Structura	horizontal a = vertical b =	2 x 720 4 x 735

Panels laid horizontally on vertical supporting members (fibre cement)

	Panel Dimensions Height x Width x Thickness mm	Fixing Distances mm	
Fibre cement	1,250 x 2,500 x 8	horizontal a = vertical b =	4 x 610 2 x 545
	1,250 x 2,800 x 8	horizontal a = vertical b =	4 x 685 2 x 545
	1,250 x 3,100 x 8	horizontal a = vertical b =	4 x 760 2 x 545
	1,500 x 3,100 x 8 Structura	horizontal a = vertical b =	4 x 760 2 x 670

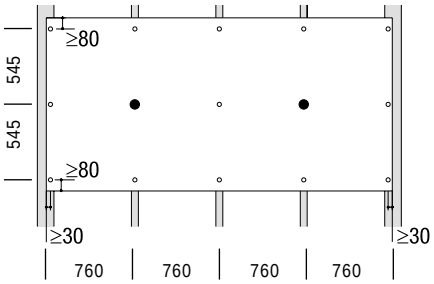
Minimum edge distances
horizontal: 30 mm
vertical: 80 mm

Maximum structural fixing distance:
for t = 8 mm, a and b ≤ 800 mm
for t = 12 mm, a and b ≤ 1,020 mm

Example of fibre cement in use

Parameters:
– Aluminium subconstruction
– Panels laid horizontally (fibre cement) on vertical supporting members
– Panel format (H x W) 1,250 x 3,100 mm

From table:
a = 4 x 760 mm
= horizontal fixing distance
b = 2 x 545 mm
= vertical fixing distance



○ Floating points
● Fixed points with fixed point sleeve

Permitted Strip Formats for Fibre-Cement Board of 8 mm Thickness

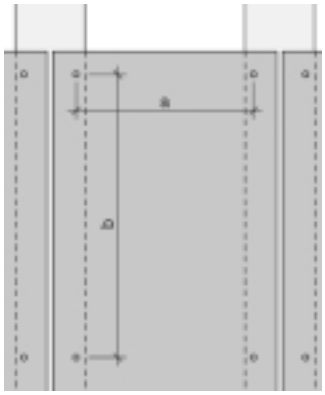
	Timber subconstruction (screwed) and aluminium subconstruction (riveted)	vertical subconstrution
Narrowest strip format, up to 1.00 m in length, with one row of fixings	Width 160 mm or more; a = 80 mm	
Narrowest strip format, up to 3.10 m in length, with one row of fixings	Width 240 mm or more, central fixing; a = 120 mm	
	Width 240 mm or more, eccentric fixing; 80 mm ≤ a ≤ 160 mm	
Widest strip format, up to 3.10 m in length, with one row of fixings	Width up to 300 mm, central fixing; a = 150 mm	
	Width 300 mm or more, eccentric fixing; 80 mm ≤ a ≤ 150 mm	
Narrowest strip format, up to 3.10 m in length, with two rows of fixings	Width up to 240 mm, fixing distance; b ≥ 80 mm	

Fixing Distances for a Single-Span Panel on Aluminium or Wood

The fixing distances for fibre-cement panels and wood-cement particle boards are identical in the case of single-span elements.

Mounting cement particle board:
The 5.5 x 45 Eternit façade screw is to be used for fixing. The screw must be sunk until its head lies flush with the board's surface.

Drilling holes:
For timber subconstructions, holes drilled in the Eternit board should be Ø 6 mm.



Fixing distances:

Wall:	Ceiling:
a: ≤ 700 mm	a: ≤ 400 mm
b: ≤ 700 mm	b: ≤ 400 mm

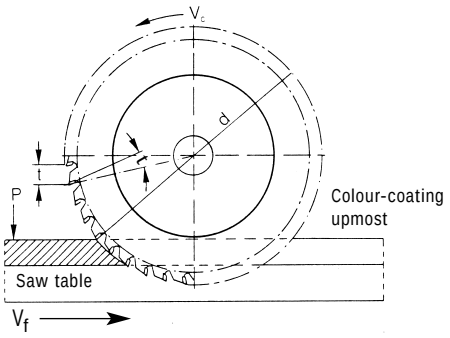
Mounting fibre-cement panels:
When fixing single-span panels of fibre cement with Eternit façade rivets on an aluminium subconstruction, care must be taken to form fixed and floating points in conformity with the specifications contained in the publication "Planning & Installation – Cladding with Fibre Cement". When fixing single-span panels, breaks (interruptions) in the aluminium subconstruction in the horizontal direction must be made at intervals of no less than 3.0 m.

Ceilings

If cladding panels of fibre cement or wood cement composite are to be fixed to ceilings, the relevant mounting and fixing specifications for each construction variant must be agreed with Eternit's technical department. It is the customer's responsibility to provide for approval of the ceiling structure on the basis of structural analysis. In general, it may be assumed that a fixing distance of 400 mm parallel to the supporting members and a centre spacing of 400 mm between members will result in a securely functioning fixing pattern.

Working with Fibre Cement Saw Blades

Feeding speed:
upwards of 20 m/min (diamond saw blades)
upwards of 3,0-3,5 m/min (carbide saw blades)



Cutting speed: 60 m/s with diamond saw blades, 2-2,5 m/s with carbide saw blades.
Various conditions need to be met in order to achieve a longer life of saw blades and top-quality cutting.

Carbide saw blades
Diamond or carbide saw blades as specified in DIN 4990, Machining and User Group K 10, are best suited to cutting fibre cement.

Silicon carbide sanding discs and diamond cut-off wheels should **not be used** on fibre cement products. This applies to both dry and wet cutting.
The reason is that both types of disc require high cutting speeds. The correspondingly high cutting pressure can lead to above-normal material stress in the area being cut. A further reason not to use these discs is that they produce extremely high levels of dust and noise.

Edge Finish

It is advisable to sand the edges of panels after cutting them to size. This reduces the possibility of damage and improves their appearance.
A block of wood, approx. 400 x 100 mm, with sandpaper (80-grit) affixed to it can be used to sand the edges.

If Natura panels are cut on site, their edges must be impregnated with Luko edge sealant afterwards. The edges of all factory-cut Natura panels are impregnated with Luko edge sealant before delivery.

Luko Pro applicator set

Site Tools

Rivet Setters

Cordless rivet setter “GESIPA Accubird”
www.gesipa.de

Jigsaws

Details:
steel saw blade, cut without ‘oscillating’.
Recommended: Bosch T 141 HM saw blade
www.bosch.de
www.festool.de

Circular saws

Festo plunge-cut saw AXT 50 LA
Power input: 750 watts
Speed: 210 rpm
Weight: approx. 6.4 kg
Festo guide rail, 3 m
www.festool.de

mafell portable panel saw system PSS 3100 SE with guide track and diamond saw blade
www.mafell.de

Vacuum cleaners

Festo special vacuum cleaner
SRH 204 E-AS
Power input: 350 - 1,200 W
Air capacity: max. 3,400 l/min
Weight: 14.5 kg
www.festool.de

Working with Duripanel
Basics

Duripanel B1 can be worked using the same tools as for resin-bonded chipboard. Duripanel B1 can be sawn, drilled, milled, sanded and planed. In professional work, only carbide-tipped tools should be used, for economic reasons. The cutting dust produced does not contain any substances dangerous to the health. It should be removed by suction nonetheless to sensure a healthy working environment. The equipment used should have sufficient suction capacity to cope with the greater dust load.

Sawing / Drilling / Routing / Sanding / Planing

Stationary Table Saws
Duripanel can be cut on both vertically and horizontally oriented saws.
– workshop saws with moveable saw head
– circular table saws with fixed, counter-rotating saw head

When sawing Duripanel B1, the workpiece can be pushed in either direction (i.e. so that the saw blade is rotating with or against the direction of feed). Machining centres with diamond-tipped cutting tools are an especially economical solution for both sawing and routing.

Cutting speed
The optimum cutting speed for Duripanel lies in the area of 30 - 60 m/s. (Feeding speed, depending on thickness, is 10 - 30 m/min.)

When cutting raw Duripanel B1 board, tungsten carbide tipped saw blades with an alternate top bevel tooth configuration should be used.

Ø saw blade	250 mm	300 mm	350 mm	400 mm
tooth count	24 - 48	36 - 60	48 - 66	48 - 78
rpm	3,000	2,000 - 3,000	2,000	1,500

Electrical handheld circular saws
With electronic speed control and dust extraction. In order to achieve clean cuts, handheld circular saws should be guided along a router guide or rip fence. Together with the backing material on the rear of the board, ensuring that the saw blade does not plunge through the work piece by more than 5 mm produces an optimum cut that is free of break-out (even with coated material), as long as all other necessary parameters, such as saw blade, tooth form and cutting speed, have been correctly chosen.

Electrical jig saws
Jig saws are particularly suitable for cutting curves and trimming pieces to fit. Jig saws with electronic speed control, pendulum action and dust extraction can be recommended. Tungsten carbide tipped (TCT) or solid carbide saw blades are suitable, especially for continuous operation.

Electrical hand drills
All commercially available machines can be used; preferably those with electronic speed control and HSS (high speed steel) bits. Do not use the hammer action for this type of work. For continuous operation, carbide-tipped lip-and-spur bits solid carbide bits should be used.

Plunge routers
For edging, profiling and routing, commercially available handheld plunge routers are highly suitable. Carbide-tipped tools and profile cutters with a guide bush make it possible to achieve very good results.

A swarf collector with a suction unit is recommended.

Cutting speed for tungsten carbide router cutters (slotting, rabbeting, joining), 25 - 35 m/s.

Ø router bit	210 mm	160 mm	180 mm	200 mm
rpm	4,500	3,000 - 4,500	3,000	3,000

Electronic handheld sanders
Belt sanders or orbital sanders should have a dust extraction facility. It is recommended to use 60 - 150 grit sandpaper.

Electric handheld planes
All commercially available machines can be used, given that they are equipped with a chip collector and tungsten carbide tipped reversible blades. Electric handheld planers are useful in particular for carrying out fitting work at edges as well as for rabbeting, routing and chamfering.

Technical Data for Eternit Fibre-Cement Cladding Panels

Bulk density	≥ 1.65 g/cm³
Bending strength	II 17 N/mm²
(Breaking point)	⊥ 24 N/mm²
Compression point	50 N/mm²
(Breaking point)	
Modulus of elasticity	approx. 15,000 N/mm²
Coefficient of thermal expansion	a_t = 0.01 mm/mK
Coefficient of moisture expansion	1.0 mm/m (air-dry to saturated)
Diffusion resistance	
Structura 8 mm	m = 350 at 0 – 50 % rel. humidity / m = 140 at 50 – 100 % rel. humidity
Natura 8 mm	m = 320 at 0 – 50 % rel. humidity / m = 140 at 50 – 100 % rel. humidity
Frost resistance	is given according to DIN 52104
Long-term temperature stability	is given up to 80°C
Building material class	non-combustible A2 (DIN 4102-1), A2-s1,d0 (DIN EN 13501-1)
Initial moisture content	— 6 %
Water absorption capacity	≤ 20 %
Thermal conductivity	l = approx. 0,6 W/mK
Chemical resistance	similar to concrete C 35/45 (formerly B 45)
Resistance to ageing	similar to concrete C 35/45 (formerly B 45)

Design Values for Eternit Fibre-Cement Cladding Panels

In accordance with approval:	Permanent load kN/m²	Permissible bending stress MN/m²	Modulus of elasticity MN/m²	Coefficient of thermal expansion $10^{-6}K^{-1}$
Z-31.1-34, 8 mm	0.18	6.0	15,000	10
Z-31.1-34, 12 mm	0.28	6.0	15,000	10
Structura balcony boards 10 mm	0.23	6.0	15,000	10

Permissible Design Load on Eternit Screws and Rivets

Type of fixing	Permissible lateral force kN	Permissible tensile force kN centre	Permissible tensile force kN edge
Coloured Eternit façade screw 5.5 x 35 a_{min} ≥ 20 mm for d = 8 mm	0.33	0.32	0.30
Coloured Eternit façade rivet 4 x 18-K 15 mm for d = 8 mm 4 x 25-K 15 mm for d = 12 mm a_{min} ≥ 30 mm	0.82	0.67	0.56
		t_{min} ≥ 1.8 mm	

a_{min} = smallest recommended edge distance on fibre-cement panels laid at right angles to the subconstruction. Edge distance parallel to profile or batten 80 - 160 mm.

t_{min} = minimum flange thickness of aluminium subconstruction.

Only these screws and rivets from Eternit with building regulations approval may be utilized.

Technical Data for Wood Cement Composite Cladding Panels (Duripanel Structura)

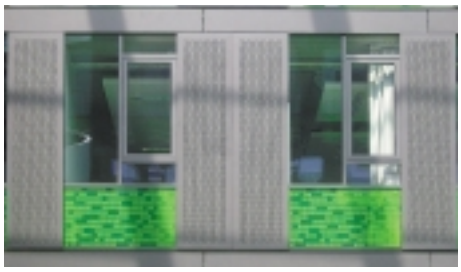
Changes of length as a result of changes in humidity of around 30 %	0.7 mm/m
Diffusion resistance according to DIN 52615	µ = 200 (0 - 50 % rel. humidity)
	µ = 60 (50 - 100 % rel. humidity)
Weatherproofing	weather-resistant according to DIN 68800-2, frost-resistant according to DIN 52104
Design value, bending strength	3 N/mm²
Design value, modulus of elasticity	4,500 N/mm²
Design value, dead load	15 kN/m³

Technical Data – Duripanel B1

	B1 – fire resistant
Material	Wood cement composite according to EN 634-2
Longitudinal and lateral tolerances / angular tolerances	± 3 mm / 2 mm/m
Thickness tolerances, sanded	± 0.3 mm
Thickness tolerances, unsandes	8 – 13 mm thick ± 0.7 mm / 14 – 22 mm thick ± 1.0 mm / 24 – 40 mm thick ± 1.5 mm
Bulk density, test/design value	1.25 g/cm³
Bending strength (test/design value[1])	≥ 9.0 N/mm² / ⊥1.8 N/mm²
Compression strength (test/design[1])	15.0 N/mm² / II 3.0 N/mm², ⊥2.0 N/mm²
Tensile strength (test/design value[1])	4.0 N/mm² / II 0.8 N/mm²
Modulus of elasticity (test/design value)	4,500 N/mm² / ⊥4,500 N/mm²
Coefficient of linear expansion	a_t ≙ 0.011 mm/mK
Diffusion resistance 50-100% RH / 0-50% RH (according to DIN 4108-4)	m = 20 / 50
Building material class	fire resistant B1 according to DIN 4102-1; B-s1,d0 according to EN 13501-1
Initial moisture content ex work	9 ± 3 %
Water absorption capacity	—32 %
Thermal conductivity	l_R = 0.35 W/mK
Dead load, air-dry	15.0 kN/m³
pH value	11 - 13
s_d value at 50 -100% humidity	0.03 m/mm
Transverse pull strength	0.4 N/mm²
Longitudinal swelling	≤ 1.5 mm/m
Longitudinal and lateral swelling, untreated boards	
60% RH→30% RH / 60% RH→90% RH / 70% RH→90% RH	1.0 / 1.0 / 0.8 mm/m
60% RH→70% RH / 60% RH→95% RH / 90% RH→95%RH	0.2 / 1.5 / 0.5 mm/m
Thickness swelling when immersed	2 hours < 1.0 % / 24 hours ≤ 1.5 % / > 24 hours (permanent wetness) < 2 %.
Weatherproof according to DIN 68800-2 for exteriors	Recommended: Duripanel Structura cladding panel from Eternit.
Constituents by volume in percent	
Wood (spruce, fir)	52 %
Portland cement	38 %
Water	9 %
Wood mineraliser	1 %
Fireproofing	Test certificates for fire ratings ranging from F 30 to F 90 exist for a variety of wall, roof and ceiling cladding assemblies.
Noise reduction	e.g. R_w = 55 dB for an aluminium stud partition wall with 16 mm board on both sides and 60 mm mineral wool insulation.
Long-term temperature stability	given up to 80° C.
Biological resistance	rot-proof, resistant to fungal and termite attak, rodent-proof.
Building biology	formaldehyde-free and isocyanate-free binder (cement), free of wood preservatives, odourless, free of Lindane and fungicide admixtures.
Chemical resistance	resistant to cleaning agents and disinfectants, including those used for animal stalls as a rule.
Disposal	on official dumps for domestic or construction waste.
Frost resistance	given according to DIN 52104; resistant to de-icing salt; oil and petroleum-proof (noise barriers).
General building regulations approval	loadbearing and stiffening boarding for wood panel constructions, DIN 1052, Z-9.1-120.
Damp-proofing according to DIN 68800-2	Equivalent to boards of wood-based product classes 20, 100 and 100 G.
Ball impact proof according to DIN 18032	FMPA Stuttgart, certificate of testing, No. 46/41326.

1) The safety factor v = 5 used in the approval relates to use for timber structures (timber panel construction) according to DIN 1052, Part 3. For uses that are not subject to approval, a safety factor of v = 3 can be used.

Perforated Panels

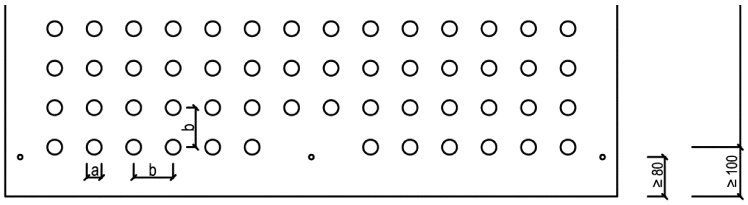


Institute of Computer Science, Dresden
Perforated panels as a design feature

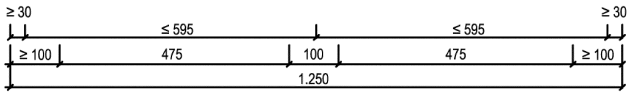
Eternit panels can be processed in a variety of ways to give a wide range of different appearances. Duripanel, for example, can be perforated over almost its entire area to let sound pass through into a noise-absorbing layer mounted behind it. The technical benefits of the panel are thus combined with a pleasing aesthetic effect. Whether you want to use Eternit panels in perforated form as noise-absorbing units or as a design feature, the following minimum dimensions need to be observed in all cases:

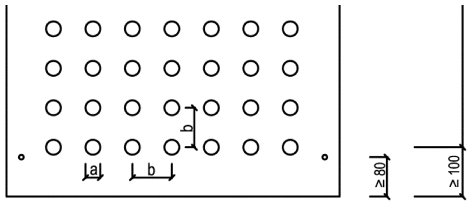
hole diameter 10 - 30 mm
width of ligament ≥ 80 mm (axial spacing)
centre of ligament ≥ 100 mm
edge distance to first hole ≥ 100 mm

Edge distances for fixing points
parallel to length of panel / subconstruction
≥ 80 mm
at right-angles to length of panel / subconstruction ≥ 30 mm

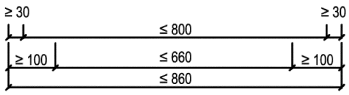


a: Hole diameter 10-30 mm
b: Ligament width ≥ 80 mm (axial spacing)





a: Hole diameter 10-30 mm
b: Ligament width ≥ 80 mm (axial spacing)



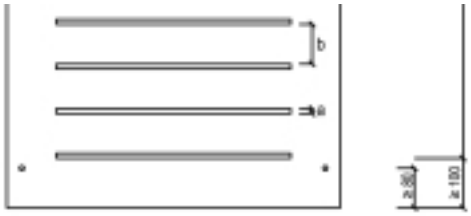
Slotted Panels

As well as perforated panels, slotted panels also work extremely well as design features or as wall cladding e.g. to screen heating units.

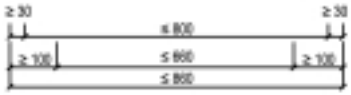
Here too, minimum dimensions and minimum distances must be adhered to:
Width of slots ≤ 30 mm
Width of ligament ≥ 60 mm
Axial spacing ≥ 100 mm
Edge distance to first slot ≥ 100 mm

Edge distances for fixing points
parallel to length of panel / subconstruction
≥ 80 mm
at right-angles to length of panel subconstruction ≥ 30 mm

a: Width of slots ≤ 30 mm
b: Width of ligament ≥ 60 mm

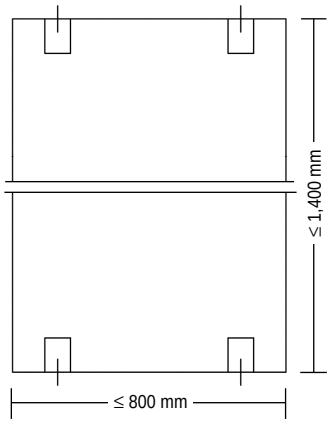


a: Width of slots ≤ 30 mm
b: Width of ligament ≥ 60 mm

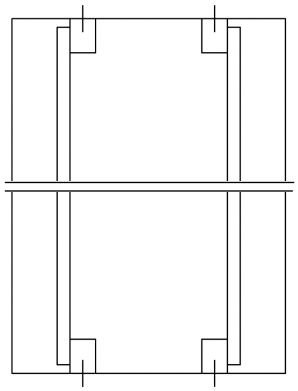


Sliding Units Made of Fibre-Cement Panels

For constructing slidings shutters of fibre cement, we recommend using Structura balcony boards, 10 mm thick, since these are fully colour-finished on both sides. Fibre cement panels 8 mm or 12 mm thick can also be used. These, however, are not colour-finished on the back, which in addition to the sealant coat is stamped with product data, so that seen from behind, they have a somewhat industrial character. Eternit Natura surfaces can not be produced with finishes on both faces.
For sliding units of larger than 1,400 mm in height an 800 mm in width, the panel must be stiffened with reinforcing sections fixed to the back. The spacings required for this can be determined using the specifications for fixing parapets of Eternit Structura balcony board in "Planning & Installation – Cladding with Fibre Cement".



Sliding shutters of fibre cement


Sliding shutters of fibre cement with reinforcing sections


Sliding shutters (perforated)

Rebound Walls / Protection from Vandalism

For use as rebound walls in sports centres, or to help prevent vandalism, a variety of constructions using Eternit cladding panels and cement particle boards have been successfully tested. These are rated ball-impact proof according to DIN 18032, Part 3 "Sports Halls – Halls for Gymnastics, Games and Multi-Purpose Use, Test of Proof Against Ball-Throwing".

Eternit fibre-cement cladding panel (12 mm)
12 mm thick Structura cladding panels are certified ball-impact proof according to DIN 18032, Part 3. Certificate of testing from FMPA-Baden-Württemberg Nr. 46/28260.

Construction:
- Format: 2,200 x 1,230 x 12 mm
- Vertical supporting battens (30 x 50 / 30 x 100 mm)
- Centre spacing of battens 625 mm (vertically)
- Eternit façade screw 5.5 x 45-K11
- Screw spacing 408 mm (vertically) and 605 mm (horizontally)

Duripanel (16 mm)
16 mm thick Duripanel boards are certified ball-impact proof according to DIN 18032, Part 3. Certificate of testing from FMPA-Baden-Württemberg Nr. 46/41326.

Construction:
- Format: 2,000 x 1,230 x 16 mm
- Vertical support battens (30 x 50 / 30 x 100 mm)
- Centre spacing of battens 625 mm (vertically)
- High-speed screw fixing
- Screw spacing 300 mm

Duripanel perforated or slotted (18 mm)
18 mm thick perforated or slotted Duripanel boards are certified ball-impact proof according to DIN 18032, Part 3. Reports from FMPA-Baden-Württemberg Nr. 46/900013 and -011.

Construction:
- Format: 2,000 x 1,230 x 18 mm
- Slotted 28/4 or perforated 16/16/6
- Horizontal supporting battens (30 x 50 / 30 x 100 mm)
- Batten spacing 480 mm (vertically)
- Screw spacing 300 mm (horizontally)
- Vertical counter battens (30 x 60 mm)
- Shock absorber pads laid in between (60/50/15)
- Elastic screw fixing through the plastic shock absorber pads to the crossing points.

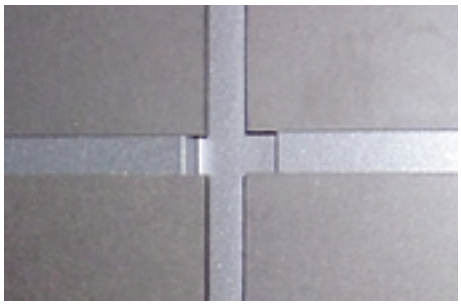
Formats, Forms, Bending

Formats
The availability of large sizes up to 3,100 x 1,250 mm (3,100 x 1,500 mm for Structura) make it possible to create a wide variety of forms and formats. The panels can be cut to any size desired, but if cut in strips they should be smaller than the specified minimum dimensions (see permitted strip formats on page 37).

Forms
Modern waterjet cutting technology allows free-form outlines and incisions to be cut, in addition to the normal rectangular shapes. If so desired, standard dimensional tolerances of less than ± 1 mm per nominal dimension and less than ± 1 mm/m perpendicularly can be achieved by calibration. Special edging word such as mitre cuts, which must leave 2 mm of the right-angled edge remaining, or polished edges, can be carried out on request.

Bending
Firbre-cement panels can be bent to create spatial effects. For thicknesses of 8 mm, the smallest bending radius is 12 m (if bending on one axis); for thicknesses of 12 mm, it should not be less than 18 m. Bent panels cannot be used in conjunction with the Eternit-Tergo concealed fixing system.

Forming Joints



The cladding panels are always laid either with open or backed joints. The more constant temperatures prevailing in interiors permit narrower joints, down to a minimum width of 6 mm. It is not advisable to seal joints with, for instance, elastic sealant (polyurethane), since this always compromises the overall appearance. By choosing different materials (e.g. stainless steel) joints can be designed in a variety of ways, using different forms, sizes, colours and alignments. Care should be taken that joint backing strips are not laid over each other, as double layers of material can cause strain in the cladding. Where the use of backing material is unavoidable, this must be less than 0.8 mm thick and at least 80 mm away from the nearest fixing point. In such cases, some loss of evenness in the panel material is to be reckoned with.

Openings

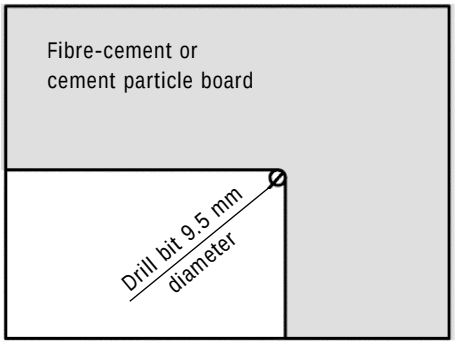
When making openings for ventilation ducts, electrical installations or other equipment to be mounted in front of the panel, an all-round clearance of at least 2 mm to allow movement should be included. The additional items should be mounted such that their load is transferred separately to the loadbearing part of the wall.

Inspection / Access Hatches

Building services (e.g. HVAC or electrical) are often installed behind cladding and this means that parts of the panelling need to be demountable at certain places. We recommend fixing these with screws, or with sections fixed to the rear of panel, which can be hung on the sub-construction. If hanger sections are used, care must be taken to avoid spoiling the overall appearance of the cladding and to ensure that the panels cannot be displaced sideways by differing responses to changes in temperature, or by mechanical stress. This can be achieved by having one fixed point on each panel.

Cut-outs and Notch Cracks

Making cut-outs or notches in fibre-cement or cement particle boards can cause cracks to occur in the corners. When doing this work, the relevant minimum edge distance for fasteners (rivet or screw) must be taken into consideration. It helps to avoid cracks if the corner to be sawn out is pre-drilled using a suitable bit, e.g. solid carbide Ø 9.5 mm. The slight curve thus created reduces the likelihood of cracking.



Noise Reduction, Fireproofing

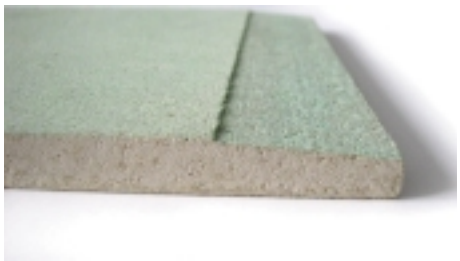
Noise Reduction
By installing 12 mm cement particle boards, a measured sound transmission loss of 31 dB at each individual panel can be achieved. Laying 8 mm fibre-cement panels produces a 10 dB reduction in the transmission of airbone sound. If used as interior cladding for walls, a construction with board of these materials can result in a reduction of exterior noise by up to 10 dB, in comparsion to an exterior wall without fibre cement cladding on the inside.
Photo: The chamber of Berlin's state parliament, with acoustic boards made of Duripanel.

Fireproofing
The classification of fibre cement and wood cement composite in building material classes A2 and B1 respectively according to DIN 4102 means that using them offers better fire protection in interiors. The use of perforated panels as acoustic boards (see page 42) allows a wide variety of high-quality sound-absorbing constructions to be designed.

Use in Bathrooms (Fibre Cement)

Interior wall cladding in wetrooms can only be installed on fully sealed walls with a rear-ventilated, surface-mounted, intermediate construction. Only colour-coated Structura panels are recommended for use in such situations. In general, fibre-cement cladding panels for decorative use in wetrooms should be considered as individual, non-standard solutions. If the room is in frequent use, they should not be used in splash zones because of the lasting deposition of scale from the water.
For bathrooms, Eternit offers a tile-backer board, Bluclad Aqua, a board for lining wet areas (see page 46).

Bluclad Aqua Wetroom Board



Applications: Bluclad Aqua ia a lining board designed by Eternit specifically for use in wet or moist rooms. Bluclad Aqua is suitable for the following areas: Catering kitchens, showers, bathrooms, sanitary facilities, swimming pool buildings, public showers etc. Bluclad Aqua is not suitable for underwater purposes (e.g. swimming pool basins), sauna cabins and steam bath rooms.
Material: fibre cement, antoclaved
Surface: smooth
Colour: pale green
Thicknesses: 9 mm and 12 mm
Formats: 3,000 x 1,250 mm and 2,500 x 1,250 mm
Features: bevelled long edges (35 mm)

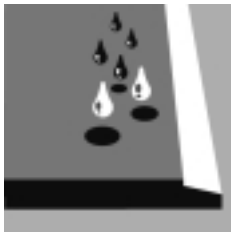
Areas of Use:

Bluclad Aqua is suitable for the following areas of use:

- dry areas or areas requiring a little moisture resistance, such as domestic rooms and offices,
- areas requiring a limited degree of moisture restistance, such as classrooms, kitchens and hospitals,
- areas requiring a medium degree of moisture resistance, such as private baths and unheated cellars,
- areas requiring a high degree of moisture resistance, such as public showers, catering kitchens, sanitary facilities, breweries and dairies.

Suitability of Bluclad Aqua for areas with requirements as below		
Class	**Definition**	**Examples**
o	walls that are only occasionally splashed with small amounts of water	walls in bathrooms for normal domestic use with a bathtub or shower tray, but without a floor drain inlet
Ao1	walls that are infrequently splashed with medium amounts of water	walls subjected to splashes in bathrooms for normal domestic use with a floor drain inlet
A1	walls that are frequently splashed with larger amounts of water from general use or cleaning	walls in public showers
C	wall that are frequently splashed with larger amounts of water containing chemicals	laboratories

Product Characteristics



- unsusceptible to moisture and waterproof according to DIN 492

- easy to work

- non-combustible

- bevelled long edge

- resistant to many organisms (fungal, bacterial)

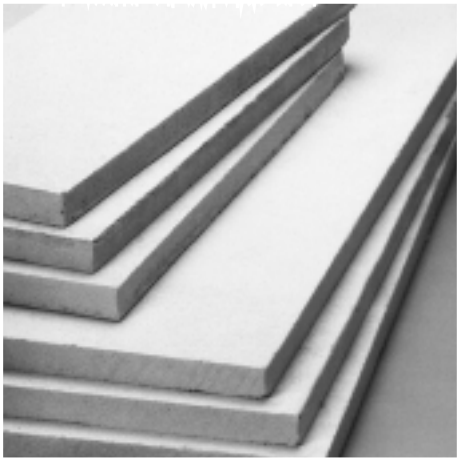
- biologically safe

- sound-absorbing
- resistant to chemicals

- shockproof (stiffness of walls)
- high strength

- permeable to diffusion

Masterclima® Interior Insulation and Renovation Board



Types of use: Masterclima® is used to line interior walls and to renovate domestic rooms after damage from fire, water or mould, as well as increasing heat insulation, combating condensation and improving the indoor climate
Material: low density calcium silicate
Surface: smooth
Thicknesses: 25, 30 and 50 mm
Formats: 1,220 x 1,250 mm
Material properties: non-combustible A1 (DIN 4102), general building regulations approval (Z-23.11-1471), seal of testing "recommended by the IBR" (Institute of Building Biologie, Rosenheim).
The board's properties allow the physically sound interior insulation of stylish or listed historical buildings and the renovation of walls that have been soaked by condensation, as well as the rapid drying of structures as a secondary measure against rising damp.
Features: repairing moisture damage, preventing mould formation, reducing heating costs, suitable for almost all types of wall lining.

Advantages at a Glance

- **Protects and maintains the value of the existing built fabric**
- **Reduces heating costs**
- **Improves the indoor climate**

Insulation cannot be fixed externally to some buildings because of their listed status, or for asthetic reasons. Their terminal performance can be improved by installing Masterclima® as a layer of interior insulation. It is available in several thicknesses, allowing the U-value (coefficient of thermal transmittance, superseding the k-value) to be improved by the amount necessary in order to reduce heating costs economically. Example: The heat loss of a brick wall 24 cm thick is reduce approx. 50% by the addition of Masterclima® interior insulation only 2.5 cm thick. Its good breathability (low tesistance to vapour diffusion) results in a much better balanced indoor climate, which is free of odours.

- **Repairing moisture damage**
- **Prevents mould formation**

Masterclima® consists of calcium silicate reinforced with cellulose. It is extremely light and absorbs condensation from the substrate like blotting paper, letting it pass through to evaporate into the air of the room. This means that the surface stays permanently dry, thus hindering colonisation by fungal spores and preventing wallpaper or paint from peeling. With a pH value of 7-10 (alkaline), it offers an environment hostile to the growth of mould, which needs pH values of 4.5-6 (acid-to-neutral).

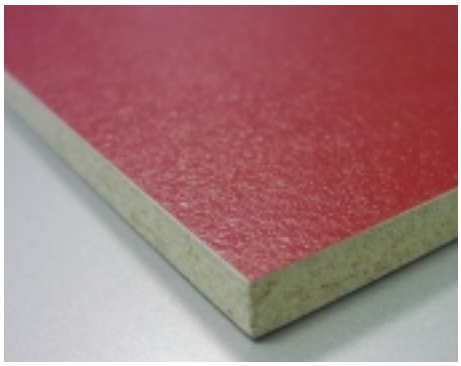
- **Constructing physically sound system solution**
- **Natural material, safe for health**

The resulting increase in surface temperature prevents the formation of consideration on the interior face of the wall. It has been independently confirmed that no mineral fibres or other additives, such as formaldehyde or CFCs, are used in the manufacture of Masterclima®. Masterclima® system building boards do not harbour mould; they stay free of insects and vermin and do not emit toxic gases under fire conditions.

- **Cost savings due to low space requirements and ease of handling**

Masterclima® offers significant economic benefits thanks to its easy-to-install, lightweight board, which needs no additional lining and avoids having to take additional structural load into account.

Duripanel Structura

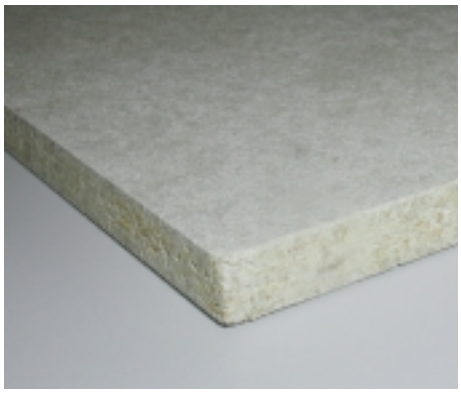


Application: upmarket interior fitout, claddings, suspended ceilings, fitted furniture
Fixing: in interiors, use screws or adhesive
Material: three-layer cement-bonded particle board according to EN 634-2, Class 1
Surface: thick finishing coat of pure acrylate, low dirt adhesion, further treatment of the surface is not necessary, surface water runs off in droplets
Colours: 3 standard colours for immediate delivery and 10 standard colours; other colours are available on request, subject to technical feasibility
Thickness: 12 mm
Format: maximum ready-cut format 3,100 x 1,250 mm
Building material class: fire resistant B1 (DIN 4102), Fire rating: B-s1,d0 according to EN 13501-1
Working: can be sawn, routed, drilled, sanded and planed with normal commercially available (carbide-tipped) power tools

white DS 107 | grey DS 205 | blue DS 410

brown DS 904 | brown DS 914 | brown DS 903 | beige DS 802 | beige DS 808 | blue DS 417 | blue DS 415 | red DS 333 | orange DS 732 | black DS 050

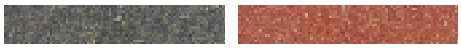
Duripanel Base board B1



Application: Interior fitout, wall linings, suspended ceilings, fitted furniture, as a stiffening board in timber construction, container building, noise reduction
Fixing: in interiors, use screws, staples or adhesive
Material: three-layer cement-bound particle board according to EN 634-2, Class 1
Surface: uncoated surface, available either sanded on both faces to show fine chipping outer layer, or unsanded for non-visible areas; for visible areas, surface treatment (painting, glazing, varnishing) is recommended
Colours: cement grey
Thicknesses: 14 thicknesses ranging from 8 to 40 mm
Format: maximum deliverable format 3,100 x 1,250 mm
Building material class: fire resistant B1 (DIN 4102), Fire rating: B-s1,d0 according to EN 13501-1
Working: can be sawn, routed, drilled, sanded and planed with normal commercially available (carbide-tipped) power tools

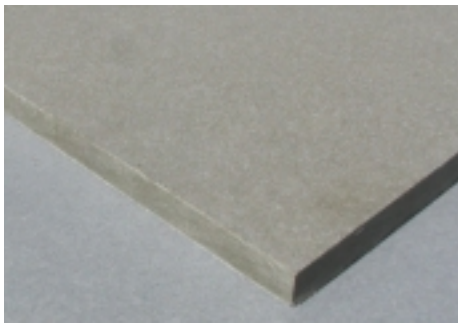
Duripanel Ruby / Anthracite

Application: Interior fitout for walls, ceilings and floors
Fixing: in interiors, use screws or adhesive
Material: three-layer cement-bonded particle board according to EN 634-2, Class 1, pigmented
Surface: sanded on both faces to show fine chipping outer layer; surface treatment (painting, glazing) is recommended for visible areas; appearance shows traces of manufacturing process
Colours: anthracite, ruby
Thicknesses: 12, 16, 18 and 25 mm
Format: maximum deliverable format 3,100 x 1,250 mm
Building material class: fire resistant B1 (DIN 4102), Fire rating: B-s1,d0 according to EN 13501-1
Working: can be sawn, routed, drilled, sanded and planed with normal commercially available (carbide-tipped) power tools



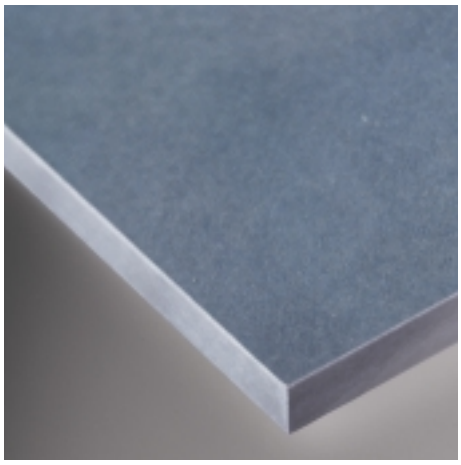
Anthracite DP 211 | Ruby DP 308

Eterplan

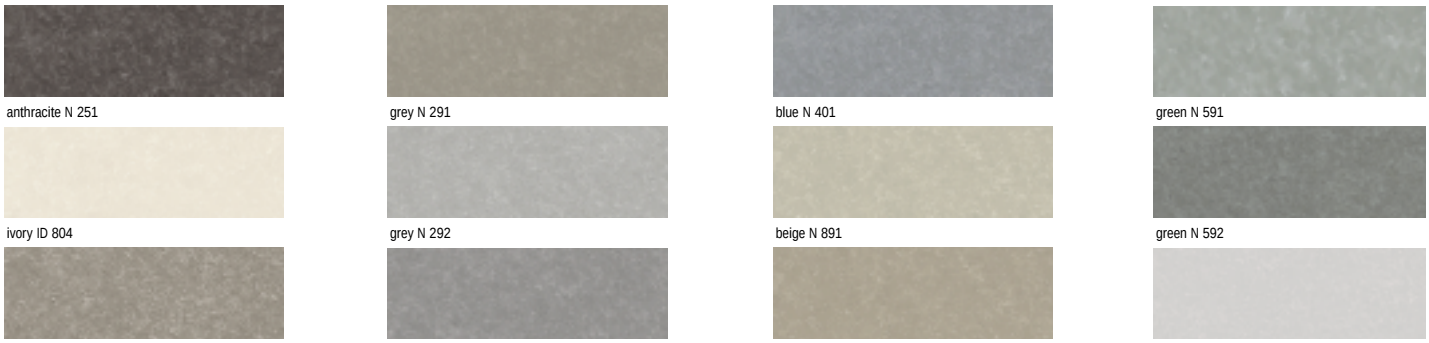


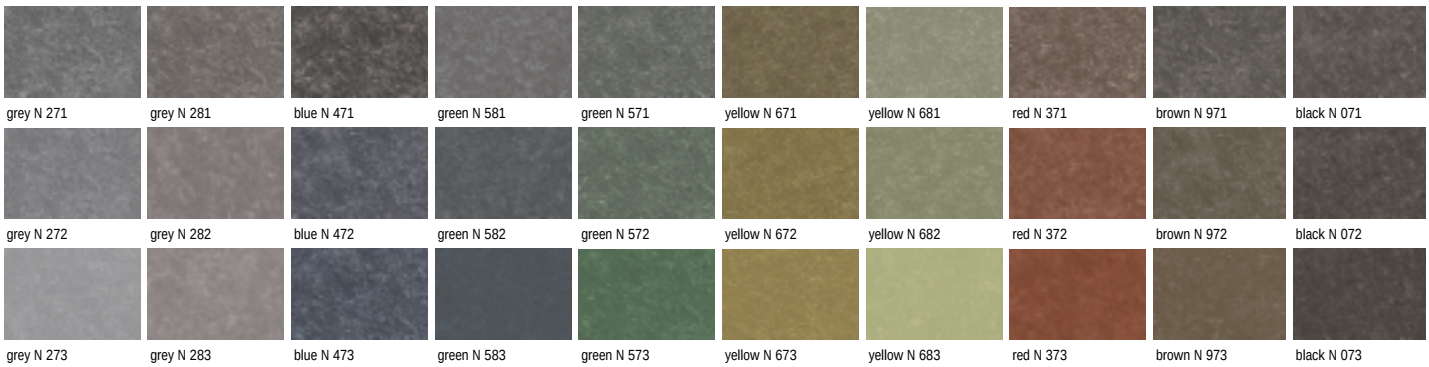
Application: lining board for walls and ceilings in interiors and for fitted furniture
Fixing: in interiors, use screws, adhesive, or rivets
Material: fibre cement, naturally hardened (EN 12467)
Surface: uncoated; when used in interiors, further surface treatment is indispensable in order to avoid possible changes of appearance. Not approved for use on exterior façades; appearance shows traces of manufacturing process
Colours: cement grey, **Thicknesses:** 6 - 20 mm
Format: maximum ready-cut format 3,100 x 1,250 mm
Building material class: non-combustible A2 (DIN 4102), Fire rating: A2-s1,d0 according to EN 13501-1
Working: can be sawn, routed and drilled with special carbide-tipped power tools

Eternit Natura Cladding Panel

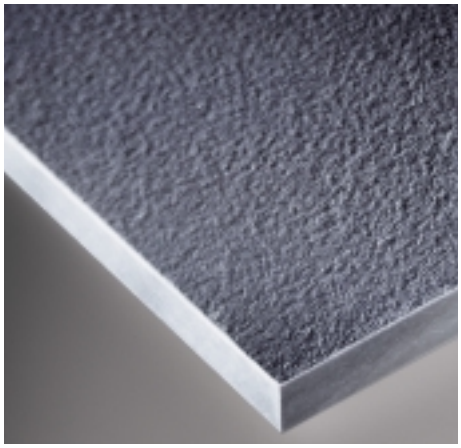


Application: upmarket interior fitout, claddings, suspended ceilings, fitted furniture
Fixing: in interiors, use screws, adhesive, rivets, or undercur anchors
Material: fibre cement, naturally hardened (EN 12467), pigmented
Surface: matt glazed, multiple-layer pure acrylate coating; internal fibre-cement structure visible through surface; no further surface treatment necessary
Colours: 3 colours with transparent glaze on pigmented fibre cement (anthracite, natural grey and ivory); 9 colours with coloured glaze on natural grey-pigmented fibre cement; 30 colours with coloured glaze on anthracite-pigmented fibre cement
Thicknesses: 8 and 12 mm
Format: maximum ready-cut format 3,100 x 1,250 mm
Building material class: non-combustible A2 (DIN 4102), Fire rating: A2-s1,d0 according to EN 13501-1
Working: can be sawn, routed and drilled with special carbide-tipped power tools



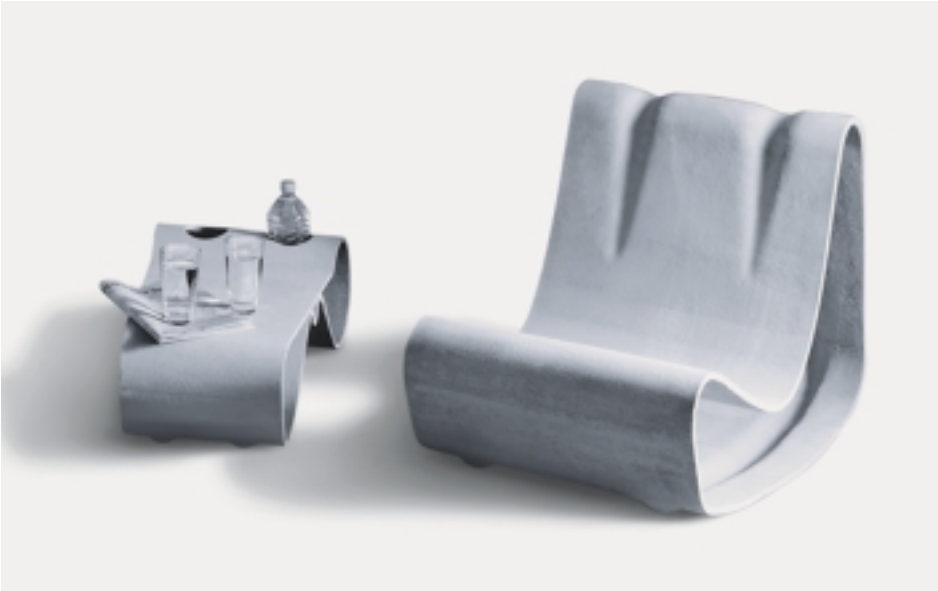


Eternit Structura Cladding Panel



Application: upmarket interior fitout, claddings, suspended ceilings, fitted furniture
Fixing: in interiors, use screws, adhesive, rivets, or undercut anchors
Material: fibre cement, naturally hardened (EN 12467)
Surface: thick finishing coat of pure acrylate, low dirt adhesion, further treatment of the surface is not necessary, surface water runs off in droplets
Colours: 15 standard colours for immediate delivery; other colours are available on request, subject to technical feasibility
Thicknesses: 8 and 12 mm, 10 mm balcony lining board, colour-coated on both faces
Format: maximum ready-cut format 3,100 x 1,500 mm
Building material class: non-combustible A2 (DIN 4102), Fire rating: A2-s1,d0 according to EN 13501-1
Working: can be sawn, routed and drilled with special carbide-tipped power tools

Eternit design



Garden chair by Willy Guhl, with occasional table

Eternit 'Spindel'

'Twista' plant pot

'Biasca' bowl

'Delta' planter

Eternit Design stands for design classics made from fibre cement for gardens and interiors. The famous garden chair designed by Willi Guhl in 1954, the legendary 'Spindel' and the charming Biasca plant pot made design history with their simple, yet unforgettable forms – and even today they seem as up-to-date as ever. Eternit's design range, which is being reintroduced in Germany, sees these classics being joined by new products: a table by Willy Guhl, large format bowls and high planters. Young designers have rediscovered the material – and have won prizes. The 2006 red dot award for product design went to Twista, a subtly formed, durable and frost-resistant plant pot by Martin Mostböck, an Austrian architect and designer. As a piece of design, each product stands for restrained, firm elegance, in perfect combination with the stable material of which it is made. Thirty percent of fibre cement consists of microscopically small pores. These allow oxygen to permeate through to the plants' roots and protect them from extremes of heat, as well as preventing the accumulation of standing water. In cold weather, the pores provide sufficient room for water to expand as it freezes, which means that the vessels themselves can be left outside throughout the winter. Altogether, optimal conditions for growth are guaranteed. All of these articles can be ordered from our official sales partner, 3S GmbH:

3S GmbH
Lise Meitner Strasse 2
D-64584 Biebesheim, Germany
Tel: +49 6258 - 803 530
Fax: +49 6258 - 803 320
Information and price list at:
www.eternit.de/design

Fax-Line +49 30 34 85 292

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Department

First name | Surname

Street | House number

Postcode | Town/City | Country

Telephone | Fax

E-Mail

Please copy this form and fax it to:

Service-Fax: +49 30 34 85 292

or send it in an envelope to the following address:

Eternit Aktiengesellschaft
Export
Knesebeckstrasse 59-61
D-10719 Berlin
Germany

Service-Line Fassade +49 30 34 85 202

I am planning the following project:

Building type _____

Location _____

☐ New building ☐ Renovation ☐ Extension ☐ Interiors

approx. m^2 façade surface _____

approx. m^2 interiors _____

approx. start of construction _____

and I require: _____

I am also interessted in:

☐ Interior insulation panels and reconstruction panels
☐ Tilebacker boards
☐ Eternit Design
☐ Rendering boards
☐ Façade panels
☐ Weatherboards
☐ Ceramic cladding
☐ Concrete tiles
☐ Corrugated sheets
☐ Roofing sheets

- Roof and façade slates
- Concrete tiles
- Corrugated sheets
- Roof membranes
- Roof insulation systems

ROOFING

- Large-size façade panels
- Façade systems
- Weatherboards
- Ceramic cladding
- Balcony panels

CLADDING

- Rendering boards
- Interior insulation panels and reconstruction panels
- Tilebacker boards
- Cement bonded particle boards

INTERIORS

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